ANNALS

—OF—

OPHTHALMOLOGY

—AND—

OTOLOGY.

VOL. IV. OCTOBER, 1895. No. 4.

IDENTICAL RETINAL IMPRESSIONS ON CORRESPONDING POINTS NOT NECESSARY FOR BINOCULAR SINGLE VISION.

BY F. B. EATON, M. D.,
OF PORTLAND, ORE.

PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY MEDICAL DEPARTMENT UNIVERSITY OF OREGON.

SEVERAL articles, some in favor, others opposing the theory of so-called compensatory action of the oblique muscles in oblique astigmatism, of which the late Dr. Culbertson[1] was the real father, would not, perhaps, repay perusal by most ophthalmologists, and refutation of the theory be of no practical importance, were not therapeutic measures founded upon it by its advocates, and some unreflecting readers influenced thereby. Arguments *pro* and *con*

[1] *Jour. Amer. Med. Asso.*, November, 1888.

have been based upon photographic pictures made with the ordinary camera, the construction of which is similar in some respects to the form and mechanism of the eye,[2] but nevertheless differs strikingly in one regard not referred to by the writers of these articles, in that the ground glass on which the image is formed, unlike the retina, presents a flat instead of a concave spherical surface. I invite the attention of the advocates of the theory to this fact, which will probably explain the occurrence of binocular metamorphopsia in emmetropes when certain lenses are before the eyes.

"The phenomena (of metamorphopsia) are not rare, not even comparatively rare. On the contrary, they are to be seen in all cases of anisometropia with binocular single vision, with exceptions. * * * The existence of astigmatic defect is not a *sine qua non*, although the phenomena are especially noticeable in cases of astigmatism of one or both eyes, in which the chief meridians are oblique.[3]"

Even some of the evidence adduced in favor of the theory affords proof of its falsity. Thus the photographs, Nos. 3 and 5, of a rectangle as seen by a cylinder with its axis vertical and horizontal and illustrating the paper of Dr. J. B. Lowry,[4] show unmistakable distortion of the vertical sides of the image.

But beyond and superior to the above-quoted reasons for giving no practical weight to the persistent and forced advocacy of this untenable theory, is that contained in the following passages in Hering's *Lehre vom Binocularen Sehen*. I commend it to those who fancy they see in the images produced by oblique-angled cylinders, as seen in the camera, an analogy to those formed on the retina in oblique astigmatism as seen by the brain, for we do not see in reality with the eye, but with the brain:

"The physical laws, according to which the images of objects lying excentrically are projected upon both retinæ, necessarily involve the fact that binocular single vision cannot be connected with identical impressions on corresponding points of both retinæ. If this were the case, only those points in the

[2] *Jour. Ophth., Otol. and Laryn.*, 1895. *Ophth. Record*, August, 1895.

[3] *Archiv. Ophth.*, Vol. XVIII.

[4] *Ophth. Record*, August, 1895.

visual field could be seen singly, which lie in certain lines and surfaces through the point of fixation. But this contradicts common experience and the results of more exact physiological investigation, and it is especially disproved by the optical effect of the stereoscope. We can only say that binocular single vision of corresponding portions of the two retinæ actually occurs, that it is to some extent obligatory, since no kind of practice, or artificial assistance, renders it possible to see the two simultaneous irritations of such points at the same time, separated, near or behind each other. We may also say that the power of the single sensation extends to *different* parts of both retinæ, and may here be called *facultative*, since practice and all kinds of artificial assistance cause an object originally seen single to appear separated into two false images. Still more, single vision with disconsonant retinal positions is one of the requirements for the solid vision of objects.[5]"

To the present champion of the new theory, whose elaborate diagrams of the retinal images in oblique astigmatism appear to be the *points de resistance* of his theoretical edifice, the above quotation is especially commended.

[5] *Die Lehre vom Binocularen Sehen.*, Leipzig, 1868.

WHICH NERVES GIVE RISE TO THE SENSATION OF PHOTOPHOBIA?

By H. Gradle, M. D.,
of Chicago.

THE following accidental observation proves that the sensory nerves of the cornea can be influenced by light under some circumstances, and that their irritation by light can cause photophobia:

Dr. B. became blind in the left eye during childhood, in consequence of a blow. An examination made in the course of our acquaintance showed white atrophy of the optic nerve with total loss of sight. The pupil reacted consensually with the other, but was wide and immovable on closing the normal right eye. During the month of October Dr. B. suffered of a circumscribed keratitis of the left blind eye, for which no cause could be found. It improved rapidly under the use of atropin, and he paid little attention to it. But in December there developed a small shallow ulcer, with gray floor, in the lower part of the still hazy cornea, which caused him more acute annoyance. The subsequent history is of no further interest, as the disease healed in about three weeks.

During the time of acute irritation, Dr. B. stated that the *blind eye was sensitive to light*. It presented the usual appearances of ciliary irritation, viz., ciliary injection, watering and partial closure of the upper lid. This partial ptosis, due no doubt to a reflex tonic contraction of the orbicularis muscle, was distinctly increased on exposing the eye to light, and lessened by relative darkness. This result was not changed by closing the other eye with a dark bandage. Moreover, Dr. B. *could tell promptly whenever I threw light into the blind eye* by means of a mirror in the dark room, the other eye being of course excluded. The sensation due to light was one of increased discomfort, not easily described in words, with tendency to shut the eye. There was neither a sensation of light nor of warmth. After the disease had healed the eye was entirely unconscious of light thrown into it.

The observation proves that the sensation of photophobia can be induced by sensory nerves without activity of the optic nerve. That the nerve fibers involved are those of the cornea is most probable in view of the paucity of sensory fibers in the other ocular tissues. Moreover, it is in diseases of the cornea that we witness photophobia more strikingly than in any affection localized in other structures. The rôle of the corneal nerves in photophobia is also shown by the decided relief following the instillation of cocain. It is true that it is only under pathological conditions that these sensory nerves react to light by inducing a sensation of discomfort and a reflex contraction of the lid-closing muscle. But we see similarly that the nerves of the skin, periosteum and other tissues react to the stimulus of slight pressure by pain only when inflamed, while when normal the same stimulus is either not felt at all or merely in a painless form.

Our observation, however, does not prove that photophobia may not also be induced through the optic nerve. It is probable that the distress to which light can give rise in some diseases, and under some circumstances even in health, is conveyed through several nerve channels. The healthy eye cannot be exposed to strong and especially flickering light, after long sojourn in the dark, without the discomfort which we call dazzling. Sensitiveness to light af a similar character, even in ordinary daylight, is complained of also by some patients with uncorrected refractive errors, but healthy eyes. Again, in incipient choroiditis we find some patients suffering, even of headache, when exposed to ordinary light. In all these instances physiologic analysis favors the conclusion that the dazzling results from an unusually inactivity of the optic nerve fibers.

It would be interesting to study the occurrence of photophobia in patients with anesthesia of the fifth nerve. In two instances of keratitis following herpes zoster I noticed—one slight, in the other patient pronounced—photophobia. But in neither patient was there total loss of sensitiveness—only partial anesthesia of cornea and conjunctiva.

THE IRIS, AS DIAPHRAGM AND PHOTOSTAT.*

By Chas. F. Prentice, M. E.,
of New York.

UNDER this title it is proposed to inquire into the value of sub-decimals of the diopter-lens in ametropia. The subject was discussed at considerable length, at a meeting of the American Medical Association, in San Francisco, Cal., 1894, with the result that "low degree lenses" were generally conceded to have a beneficial effect in some cases of ocular refraction, but, so far as I have been able to ascertain, from a perusal of supporting opinions, the considerations here presented were not touched upon in the arguments advanced.

In every compound lenticular system we are met with the necessity of providing against spherical aberration. This is accomplished, in the construction of optical instruments, by introducing an annular disk, of *calculated* diameter, known as the *diaphragm*, which is suitably placed between the lenses to exclude peripheral rays. If the proper diaphragm be replaced by one of smaller aperture, we increase the definition, but diminish the extent of field and illumination. A larger aperture will increase illumination and field, but definition will be impaired, on account of the aberration thus allowed.

The aperture of the diaphragm must therefore have a definite and specific diameter for every optical instrument, if we are to secure *maximum* definition and illumination, *without aberration*. The proper diaphragm is therefore one of the most important and indispensable parts of every compound dioptric system. The human eye is such a system, and is

*Photostat Greek, φῶς(φωτ-), light, + στατός, verbal adjective of ἱστάναι, stand—an automatic light regulator.

provided with its diaphragm—the iris. In the eye, which is a dynamic apparatus given to variations of power, a fixed diameter of pupil would fail to theoretically fulfill the requirements. When the eye is in a state of accommodation, it becomes a stronger refracting system, and therefore needs a smaller aperture of diaphragm; hence the pupil contracts.[1] Yet, Helmholtz[2] says: "A. von Graefe observed in an eye from which he had removed the iris by operation that the normal range of accommodation was still present, and also that the changes in the anterior curvature of the lens could still be observed." He concludes: "The iris does, therefore, not play an important rôle in accommodation." (Lit. trans.) Landolt[3] expresses the same opinion. So far as the above noted measurements are concerned, such conclusion may be quite correct, yet, if construed in its broadest sense, it discountenances the value of the iris as a diaphragm entirely.

It is, nevertheless, universally admitted that the iris does act independently of, and simultaneously with accommodation.[4] When acting independently of accommodation, the iris is known to behave as a highly sensitive *photostat*, though regulating the volume of light upon the retina to such a degree as shall be most agreeable to our light-perceptive sense.

A most subtile and synchronous balance, between retinal perception, uveal stimulus, and iritic response, must therefore exist, if the iris is to perform its functions simultaneously as diaphragm and photostat.

An endeavor will here be made to support the hypothesis that *a disturbed equilibrium of these functions is probably the cause of asthenopia in low degrees of ametropia*. From a strictly optical point of view, every eye of the same refrac-

[1] In fact, it was at one time supposed that contraction of the pupil was the only means by which the eye adapted itself for near vision. Helmholtz, *Physiologische Optik*, page 151, Hamburg and Leipzig, 1886.

[2] Helmholtz, *Physiologische Optik*, page 138.

[3] Landoldt, *Refraction and Accommodation of the Eye*, page 164, Philadelphia, 1886.

[4] "Movements of the iris are nevertheless associated with accommodation; they are governed by the same nerves as the latter, so that, until the mechanism of accommodation is better understood, a direct relation between them may not be looked upon as being improbable" (lit. trans.) Donders, *Refraction and Accommodation*, page 485, Wien, 1866.

tion, other things being equal, should have a pupil of the same diameter—one suited, by *calculation*, to exclude peripheral aberration, while securing the greatest tolerable illumination. This, however, is not known to be the case, nor have I found that any one has ever calculated what the diameter of the pupil should be for any given schematic eye. Listing has calculated a table showing the changes in diameter of the diffusion circles upon the retina which arise through efforts of accommodation in a schematic eye having a pupil of 4 *mm.*[5]

We have thus far been content to know that pupils differ in size in different persons. There must, however, be a *limit* to the maximum diameter of the pupil, if aberration is to be excluded, and if, *for any reason*, the pupil is prevented from contracting to at least this limit, we shall have aberration, even in the emmetropic eye.

This is *exaggeratedly* shown in Fig. 1, in which the central incident rays, *cc*, focus at *f* upon the retina, while the

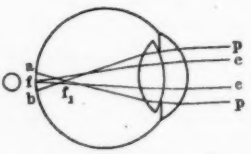


FIG. 1.

peripheral rays, *pp*, produce thereon an area of diffusion,[6] *ab*, and which to all practical purposes, would be equally as effective in impairing vision as a low degree of myopia, having its intra-ocular focus between the retina and f_1. In fact, it is questionable whether the eye can discriminate between images which are impaired by peripheral aberration and those which are illy defined from slight errors of refraction. The following experiment will serve to illustrate this: By placing a 1 D. convex lens before the emmetropic eye, it is practically rendered myopic for distance, the letters of the test-card at 6 *m.* becoming indistinct, with a probable reduc-

[5] Helmholtz, *Physiologische Optik*, page 127.

[6] For purposes of lucid illustration, the diffusion areas in all of the diagrams are greatly exaggerated.

tion in the visual acuteness to say $\frac{6}{9}$. If the lens be now covered with a pin-hole disk, normal acuteness of vision will be re-established, with no other appreciable difference than that the field and illumination are less. We may therefore consider the peripheral rays, here accompanying the increased refraction, as aberrative rays in respect to the enclosed central incident beam, so that an eye capable of contracting its pupil to the same extent would, in part, similarly correct its error of refraction.

This is undoubtedly one reason why errors of refraction of the same degree are not accompanied by the same diminution of visual acuteness. The myope of 1 D., with small pupils, *without* glasses, will probably have better vision than the myope of 1 D. with much larger pupils. Within certain limits, peripheral aberration and anomalies of refraction are analagous in destroying definition of the image. A slight error of refraction, with large pupils, may produce diffusion images equally as pronounced as a considerable refractive error with small pupils. ***Asthenopia is therefore quite as apt to be experienced on account of the size of the pupil, as it is on account of the error of refraction.*** This should explain why it is that many persons, having small pupils, endure a considerable error of refraction without inconvenience, while others, with large pupils and small errors of refraction, are afflicted with asthenopia.

Again reverting to Fig. 1, the larger the pupil, the greater will be the zone of peripheral aberration and its correlated diffusion-area, *ab*. In fact "the peripheral aberration upon the optical axis is known to increase, not only in proportion to the square of the aperture, but, also *pari passu* with the refraction" (physical law), so that we should have greater diffusion circles upon the retina, when the ciliary muscle is brought into action, even in emmetropia, to correct the peripheral aberration which impairs the sharp definition at *f*. The only stimulus which could assist in correcting the aberration in this case would be that which, imparted to the iris from the retina, would cause the pupil to contract sufficiently to exclude peripheral rays. In here speaking of the retina, we of course take for granted its highest state of physio-

logical development. The question then arises: Is such retinal stimulus imparted to the iris in low degrees of ametropia, *independent of accommodation, without increased light intensity?* If there is such independent action on the part of the iris, ineffectual efforts of the ciliary muscle to correct impaired vision may be followed by a contraction of the pupil necessary to shut out the peripheral rays. As to this, let us investigate the relation which should exist between the iris and accommodation in the hyperopic eye.

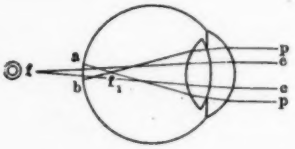


FIG. 2.

In this, Fig. 2, the central rays, *cc*, are focused behind the retina at *f*, the peripheral rays crossing at f_1, and producing the diffusion-area *ab*. In facultative hyperopia there will be accommodation sufficient to bring *f* forward to the retina. With this increased refraction, however, the pupil remaining the same, f_1 will recede from the retina, with a corresponding increase in the size of the diffusion-area, *ab*[1]. It is therefore

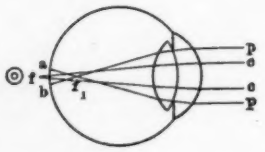


FIG. 3.

evident that, if *increased* aberration is to be avoided, a *normal* pupil must contract concurrently with the accommodation. This, generally speaking, is known to be the case. If, as in Fig. 3, the hyperopia is of low degree, with *excessively* large pupil, we shall have a comparatively small central area of diffusion, due to the refractive error, covered by a much larger area of diffusion and illumination, *ab*. The slightest effort of accom-

[1] Listing's table shows that the diffusion circles upon the retina increase more rapidly as the object approaches the eye at short range. Helmholtz, *Physiologische Optik*, page 128.

modation would tend to sustain, or increase this discrepancy. It therefore follows, if the aberration is to be abolished, that the iris must receive an increased stimulus to bring about a contraction of the pupil, *in excess of that which is concurrently associated with accommodation, and that, too, for every degree of light intensity*. Were this not the case, vision, at a distance,[8] with excessively large pupils, would be impaired by aberration under all circumstances.

The additional stimulus to contraction is undoubtedly due to the *increased area of illumination* above mentioned. This would seem to imply that the contraction of the pupil not only responds to the light intensity (quality), but also to its area (quantity) upon the retina.

It is also evident that the impairment of vision should be ascribed to that factor causing the largest area of diffusion upon the retina. The larger the pupil, the more will the peripheral aberration predominate over that which is produced in the center by a low degree of refractive error.

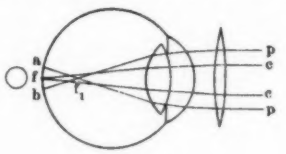


FIG. 4.

By placing the lens before the eye which corrects the hyperopia we increase the refraction, thus eliminating the diffuse central image, but at the same time increasing the peripheral aberration, and therefore also the *area of illumination*, Fig. 4. If the pupil contracted only in *proportion* to the consequent increased light stimulus there would still remain the original diameter of diffusion area. As, however, correction of the refractive error by the lens improves vision, and relieves asthenopia, being *tacit proof* that the aberration is dispelled, it is evident that the pupil must contract *more* than

[8] In accommodation, with a standard light placed behind the plane of the eyes, and an approach to them of the paper upon which the test-type is printed, the illumination upon the paper increases in the inverse proportion to the square of the reduced distance between the light source and the test-object. The illumination also varies directly as the cosine of the angle of incidence upon the illuminated surface. (Physical Law of Photometry.)

in proportion to the aforesaid light stimulus. Is it not then probable that the pupil contracts *more freely* when accommodation is relaxed?

In controverting this, it would be necessary to refute the following fact pertaining to combined kinetic energies:

When accommodation is in force, the iris is known to be carried forward,[9] by pressure from the anterior surface of the lens, which has become more strongly curved. Such lens pressure, *the iris remaining inactive*, would tend to increase the diameter of the pupil. On this account, greater efforts of the sphincter will be necessary to counteract this action of the lens-surface, when accommodation is present, Fig. 5, than it would with relaxed accommodation, Fig. 6.

For *normal* conditions of innervation the sphincter is known to more than overcome such action on the part of the

FIG. 5.

FIG. 6.

lens in accommodation, Fig. 5. If, therefore, our hypothesis is correct, we have found a reason why low degree lenses are of so much benefit in slight hyperopia, and congeneric astigmatism. Furthermore, we are justified in assuming that the sphincter in large pupils does not always adequately respond, *while accommodation is in force*, especially in cases where the optical error is so slight as a quarter diopter, from the fact that, in the majority of such cases, the patients are young, and often possess amplitudes of accommodation varying between 6 and 14 diopters.

Patients with such accommodation have so much of it in reserve, even when using the eyes in proximity, that their asthenopia can scarcely be ascribed to an overtaxed ciliary muscle. Are we not then justified in attributing it to possible

[9] Helmholtz, *Physiologische Optik*, page 131, Wien, 1886.

fatigue of the iris, resulting from its involuntarily prompted, though futile, efforts to exclude peripheral aberration, because of the sphincter's inability, *for some reason*, to contract sufficiently?

It is not recorded that a disproportion of the pupils to the dioptric system of the eyes does ever exist physiologically, but there are many conditions of the nervous system which produce immoderate dilatation of the pupils. Such dilatation, *while it lasted*, would tend to oppose the normal association between refraction and the correlated size of the pupil.

In those cases of *normal* pupil, where the perceptive qualities of the retina are good, and the error of refraction is slight, retinal stimulus will prompt contraction of the pupil sufficient to exclude aberration. Is it not probable that, in some cases with *large* pupils, protracted efforts of this kind would result in fatigue of the iris? Might not prolonged ineffectual efforts of the iris to regain equilibrium between its functions, as diaphragm and photostat, account for asthenopia? Or, to put it in another way: Could not that prolonged effort of the sphincter, which would have to be *in excess* of the normal qualitative and quantitative light stimulus, to correct aberration, produce asthenopia?

It need not follow that the iris is incapable of temporarily contracting even to a greater extent than is necessary for the above purpose. This is demonstrated by the extreme contraction of which the pupil is generally capable when exposed to intense light, and the eye is in its static state of refraction.

In hyperopes, we generally ascribe the cause of asthenopia to fatigue of the ciliary muscle, owing to its efforts to exclude the error of refraction by accommodation. The same can not be said of myopes, whose use of accommodation for such purpose would only render them deplorably more myopic. Their asthenopia can certainly not be ascribed to ciliary fatigue. Some myopes, however, endeavor to improve their vision by compressing the eyelids, which means that they thereby *modify the pupils* to exclude peripheral rays, and the aberration which is heightened by the myopia. In low degrees of myopia and congeneric astigmatism, however, modification of the pupils, by compression of the eyelids, is not sufficiently

delicate to exclude aberration, *without too great a sacrifice of illumination*. Such patients are therefore more apt to apply for relief from glasses, than those who help themselves by compression of the eyelids, provided this is unaccompanied by asthenopia. In the former cases, we are to suspect that the relief sought is: *freedom from peripheral aberration*. The latter also aggravates *photophobia*, which is a symptom frequently complained of in such cases.

The improvement in vision, which the myope, of low degree, with large pupils, secures by the lenticular correction, is practically due to the fact that the peripheral aberration is decreased, through reduced refraction obtained by the concave lens in front, Fig. 7.

The rays, emitted from the concave lens, enter the pupil with a divergence counteracting the excessive convergence of

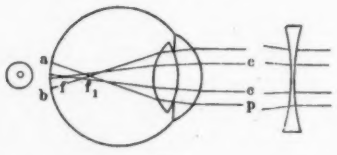


FIG. 7.

the rays which are imperfectly focused by the crystalline on the retina behind *f*. The peripheral diffusion area, *ab*, may not, however, always be in such proportion to the central diffusion area as to be fully corrected by the lens which corrects the refractive error in the center. Should it, in the case of a larger pupil, be greater, the patient would merely then select a stronger lens, having its proper effect upon peripheral rays, while its tendency would also be to over-correct the myopia. For a low degree of myopia this would scarcely be appreciable, since very little difference is experienced in the actual centers between lenses of a quarter and a half diopter.

In those cases where the quarter-diopter lens seems to relieve distress it will generally be found that the pupils are comparatively large. This is especially noteworthy in those cases where simple myopes of low degree are benefited by wearing their weak distance corrections for *reading*, and which can serve no other *needful* purpose than to eliminate peripheral aberration.

So far, we have no means of ascertaining the size, or that variation of the pupil which is necessary to establish the proper harmony between refraction, accommodation, illumination, and freedom from aberration. The intuitive discrimination, which accompanies experience, is at present our only guide.

In refractive errors of low degree, which are relieved by lenticular correction, the retinal perception is usually also very keen, thus increasing stimulus to contraction of the sphincter, while the correction in such cases frequently improves vision to $\frac{6}{5}$, which is far above normal.

The larger the pupil, the more pronounced will be the improvement in visual acuteness obtained by low-degree corrections. The quarter-diopter lens rarely proves of benefit when the pupils are small.

Again, patients frequently wear such glasses for a time, relieving their asthenopia, and ultimately lay them aside, without feeling the necessity of their further use. Examination will nevertheless reveal the fact that *the optical error has not changed*. Why then should asthenopia exist at one time, and not at another, for an *invariable* hypermetropic astigmatism for instance, if the fatigue in the first instance had only been due to that of the ciliary muscle?

Closer examination, however, will frequently show that the pupils appear to be smaller at the time the patient has discarded his glasses, than when they were prescribed. The pupil being the only member seeming to have undergone a change, are we not justified in suspecting the iris, by reason of disturbed innervation, as having been at least implicated in the cause of asthenopia?

REMOVAL OF THE SUPERIOR MAXILLARY BONE FOR SARCOMA, INVOLVING THE CEREBRAL AND ORBITAL CAVITIES AND THE ANTRUM OF HIGHMORE.

By Walter B. Johnson, M. D.,
of Paterson, N. J.

A. H., 10 years of age, female, born in England. On September 4, 1893, applied for treatment at the Paterson Eye and Ear Infirmary, with the following history:

Her father died seven years ago from unknown causes, being away from home at the time. Her mother is in good health; although not a robust woman, she has been able to work and support her family. She states that she never heard of any malignant diseases or growths in any of the members of either her own or the father's family.

The patient has always been a strong, healthy child, never having had any illness except the diseases of childhood, all of which she had when very young, and after which none of the common sequelæ were developed. On the 8th of August, twenty-six days ago, she was struck on the right side of her face by an opening gate, and states that although she was not struck in the eye she had pain in it immediately after the accident, which continued to increase in intensity each day, there was no cut or bruise about the face or head. The mother states that the child did not complain of pain until three days after the injury, at which time she noticed that the right eye was somewhat prominent; that there was redness about the conjunctiva and considerable lachrymation. The prominence of the eyeball steadily and quite rapidly increased from the time when it was first observed; there was some

photophobia, she has constantly suffered from headache, frequently of sickness of the stomach, and has been very drowsy and somewhat stupid. She has had some fever and for the past two weeks her tongue has been coated and her lips and mouth dry, her bowels have been kept regular, moving each day, there has never been any purulent discharge from the eye.

September 4, 1893. On examination the patient complains of severe headache, and considerable pain in the eye, especially when it is uncovered, her tongue is coated and her mouth dry; pulse 108; she is excitable and nervous. The mother states that the prominence of the eyeball has markedly increased during the past two days. The right eyeball is extremely prominent, being fully one-half inch in front of the plane of the fellow eye and displaced downward, forward and outward. The patient, on making a special effort, can close the lids and completely cover the eyeball. The pupil is responsive to light, and about the same size as that of the fellow eye. The mobility of the eyeball is very much impaired, especially outward, inward and upward; behind and to the nasal side of the eyeball is a tumefaction which is somewhat resilient. The appearance of the face and probable size of the growth when first seen is illustrated by the upper section, No. 1, of plate No. 1. R. E. V. = fingers at 2 feet; L. E. V. = $\frac{20}{15}$.

Ophthalmoscopic examination: The right fundus shows a very hazy optic disc, the retinal arteries and their branches are reduced to about one half their normal size, the veins are very much engorged and are distended, they are about twice their normal size, somewhat tortuous and very dark colored.

September 9. The patient has grown steadily worse, as shown by the decided increase in the prominence of the eyeball, Plate No. 1, Section No. 2. The mobility of the eyeball is still more impaired, only slight motion inward, downward and upward remaining. R. E. V. = fingers at 6 inches. The right nasal cavity is completely filled with new tissue, it is entirely closed and permits neither expiration or inspiration, there is a welling out of pus from the puncta lachrymalis on pressure, also a profuse discharge of thick, creamy pus from the nose. The patient was referred to the Manhattan Eye and Ear Infirmary for diagnosis. The following reply was

received from Dr. A. E. Adams: "I am inclined to think the case one of sarcoma, it may be osteoma periostitis, etc. In any case, I should say the only thing to do is to remove

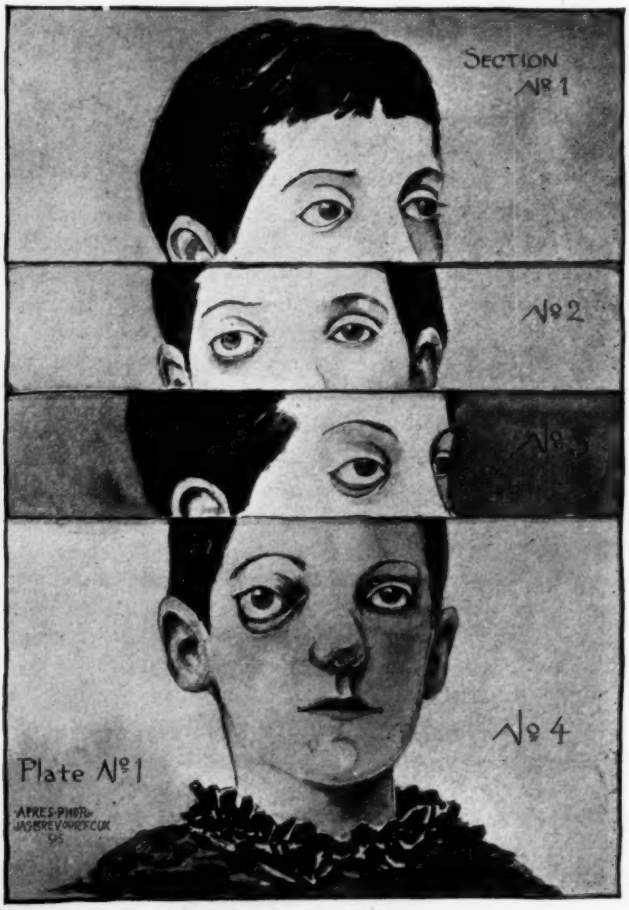


PLATE NO. 1.

it, if possible. I have asked Dr. Lewis to look at the case, and he agrees with me in the main."

September 12. The growth has continued to increase rapidly, its size is indicated on Section No. 3, of Plate, No. 1. The case was referred to Dr. H. Knapp, with the following

letter: "The bearer of this note, a patient of the Paterson Eye and Ear Infirmary, I send to you for your opinion. I would be pleased if you would also state what you think regarding the possibility of success in operating for its removal. You will notice that it extends to the right nasal cavity. It has grown to its present size since Monday, September 4, when the enclosed photo was taken."

The case was examined at the Ophthalmic and Aural Institute by Alexander Duane, M. D., who wrote as follows:

"Writing in place of Dr. Knapp, who is absent, I would say that examination points to suppuration from the ethmoid region (the right nasal fossa full of pus); the indication being to make an incision and explore to evacuate matter. Case examined by Dr. Born and myself for the eye and by Dr. Tocplitz for the throat. I would be glad to hear what you find in case you operate. The diagnosis in these cases is always rather problematical, and all such cases are instructive."

September 13. The patient was placed under ether and an examination made; it was positively determined that the diagnosis was some variety of new growth which fully occupied the right nasal cavity, as it also did the right orbital cavity. An hypodermic needle was introduced into the orbital cavity, well behind the eyeball, and some blood withdrawn, there was no evidence of the presence of pus. A small portion of the growth was removed from the nasal cavity for microscopical examination and submitted to Dr. Joseph W. Williams, who reported as follows:

"I have examined the specimen taken from the nasal cavity of Annie Hill and find it to be a sarcoma of the small, round-celled type. The cells are in great profusion, composing almost all of the diseased material. There is only a very small portion of fibrous tissue in the new formation. The growth is undoubtedly of a very malignant nature."

September 21. The protrusion of the eyeball has increased very much during the past three or four days. There is marked conjunctival chemosis, as shown on Section No. 4, of Plate No. 1, taken September 20. It was decided that an effort at the removal of the growth, which it was then believed originated in the antrum, should be undertaken. The patient

was etherized, a tracheotomy performed and the fauces plugged with a cotton tampon. An incision was then made from the temporal side of the upper eyelid, just under the brow, around the inner canthus, down the side of the nose, around the allæ to and through the center of the lip. The flap thus formed was dissected back, exposing the superior maxillary and malar bones, the eyeball and the new growth.

PLATE NO. 2.

In removing the flap, the conjunctiva was dissected from the eyeball carefully and cut close to the limbus cornea. Saw cuts were made through the hard palate and through the malar bone, and the bone loosened, careful dissection was made backward and inward, and the mass shown, in Plate No. 2, removed. Care being taken to leave the soft palate intact. The mass consists of the right half of the superior maxillary

bone, the eyeball and the new growth, which was contained in the orbital, nasal and cerebral cavities and the antrum of Highmore. The foci of the new tissue formation was apparently the ethmoid bone, which was softened, diseased and enveloped in the new growth. The involvement of the other cavities was undoubtedly secondary. The bone and new material was removed and the dura mater exposed. There was discharged from the cerebral cavity some thick, yellowish pus. The dura mater did not appear to be involved. The condition of the patient was such as a result of shock and hemorrhage that hypodermics of brandy and injections of saline solution were necessary to prevent fatal collapse. The cavity was packed with iodoform gauze and the flaps sutured.

September 22. The patient passed a satisfactory night, complained of no pain and took some nourishment. Morning temperature, 102°; pulse, 140. Evening temperature, 104°; pulse, 140.

September 23. The tracheotomy tube was removed. The patient is taking ample quantities of nourishment, but had developed some delirium during the night and complained of soreness of the muscles of the neck and back, and cried out when moved. There were occasional semi-convulsive seizures, with a contraction of the muscles, producing opisthotonos.

September 25. The patient complains of no pain in the wound, and is in better condition, although the delirium persists, and she had, during the night, disturbed the dressings and picked out some of the sutures.

September 27. The delirium was not so marked during the night, the patient is more comfortable and takes large quantities of milk.

September 29. The patient is perfectly rational. All symptoms, except rise of temperature each evening, have disappeared. The temperature during the week has ranged from 102° to 105°.

October 1. There is still slightly increased temperature each evening, the patient is comfortable and does not complain.

October 25. Since last record, twenty-five days ago, the patient has been cheerful and happy, rarely complaining, even when the wound was dressed. The temperature has been

constantly slightly above normal, the external wound is completely united, the cavity is granulating; there has been a constant and very considerable discharge of purulent secretion from it; there is no apparent return of the growth. The patient has taken large quantities of liquid nourishment, but has never, since the operation, regained her strength, and has lost flesh constantly, until at the present time she is extremely emaciated.

October 26. The temperature again rose, varied from 102° to 105½° during the day, and the patient developed an active delirium during the night. The symptoms persisted during the week following, during which time the patient grew constantly weaker and more emaciated.

November 2. She passed quietly away, forty-two days after the operation.

An autopsy made twelve hours after death disclosed in the cerebral cavity a considerable quantity of new tissue formation, making pressure on the anterior cerebral lobes. The new growth had involved the dura mater, and there was in the cerebral cavity some purulent secretion, the product of marked inflammatory action upon the cerebral membranes. The brain tissue was healthy. There was no tumor tissue re-formed at the seat of the operation.

The interesting features in the case are the uncertainties which presented themselves regarding the diagnosis, the exciting cause of the trouble being due apparently to an injury which occurred coincidently with the onset of the disease. The constitutional disturbance seemingly indicated the presence of periosteal inflammation as a result of possible injury, as did also the extremely rapid development which followed the first appearance of the ocular prominence.

TRAUMATIC PARALYSIS OF THE EXTERNAL RECTUS.

By Wm. E. Bruner, A. M., M. D.,
OF CLEVELAND, OHIO.

CLINICAL ASSISTANT IN OPHTHALMOLOGY, DISPENSARY OF WESTERN RESERVE MEDICAL COLLEGE, AND ASSISTANT IN CHARGE OF EYE CLINIC, ST. VINCENT HOSPITAL.

IN the *Archives of Ophthalmology*, Vol. XXIII, page 361, Dr. Purtsher, in a somewhat extended discussion of traumatic paralysis of the abducens nerve, reviews the literature of the subject consisting of forty-six cases. In the same number, Dr. Friedenwald adds eleven additional cases—ten reported by other persons and one from his own observation. In the last number of the same journal, Dr. Zimmerman[1] adds two more cases, one described by Prof. Eulenburg and one from his own practice. To these fifty-nine cases, I should like to add one more, which I have had under observation for several months:

M. F., 32 years of age, consulted me May 28, 1895, with the history that six weeks before, while he was working in the large steel mills in this city, his head was caught between two carriages. There was bleeding from the nose and from both ears, he says, at the time of the accident, and the right ear continued to bleed at intervals for a week. Blood would come from the ears when he swallowed. He was not rendered unconscious, though he says he felt sleepy, but could not sleep on account of the pain. This was general at first, but soon became localized to the right temple, and continued,

[1] *Archiv. Ophthal.*, Vol. XXIV., p. 243.

though gradually lessening, for five or six weeks. He was confined in a hospital for two weeks. Ever since the accident, he says that he has been "seeing double."

Examination revealed vision normal in each eye, but a little more acute in the left. Accommodation, Jaeger No. 1, pp. O. D. 25 *cm.*; O. S. 23 *cm.* Pupils were unequal, the right being the larger, and both responded readily to light and in accommodation. The diplopia which is present when he looks directly before him increases as he looks toward the right, but disappears as he turns his eyes to the left. A limitation of the movement of O. D. outwards is readily detected. The homonomous diplopia which results when a red glass is placed before one eye is overcome by a prism 22°, base *out*.

Ophthalmoscopic examination: O. S. media clear, disc round, with physiological excavation, slight disturbance of choroid surrounding the disc, and semi-atrophic cresent up and in. Disc is normal in color and the vessels are normal. O. D., similar condition exists except that the outer half of the disc appears slightly paler than the inner half. Vessels are normal.

Perimetric measurement showed the form field normal in the right eye, and the color fields slightly contracted for red and blue, especially upon the nasal side. Both form and color fields in the left eye were of full extent.

Dr. H. S. Straight kindly examined the ears for me, and gave the following report: "In the right ear there is a depression of the membrane in front of the handle of the *malleus*, and an old perforation, which had healed, in the anterior-inferior quadrant. In the left ear the membrane presented a ground-glass appearance, with no light spot. There is no indication of a perforation. Hearing distance with the left ear was 30 inches; with the right, 2 inches. Heard worse after inflation. In the nose there is a slight deviation of the septum to the left, but otherwise it is normal. Pharynx and naso-pharynx are normal."

He was given absorbent and alterative treatment consisting of bichlorid of mercury and iodid of potassium. His condition gradually improved, and when he was examined, June 14, he no longer had diplopia when looking straight forward, but

only when he turned the eyes to the right. He was then at work and was annoyed very little by the double vision. With the red glass before one eye, homonomous diplopia was still present, but was overcome by prism 10° base *out*.

On August 14, I examined him again. He was then no longer troubled at all with diplopia, and it could not be developed, not even with red glass, except at the extreme right of the binocular field of vision. With the Maddox rod there was esophoria 3°. The eyes now give him no trouble whatever. Vision, O. D. $\frac{5}{4}$ partly, O. S. $\frac{5}{4}$. Accommodation, Jaeger No. 1, pp. O. D. 24 *cm.*, O. S. 21 *cm.* The right pupil is very slightly larger than the left, but is otherwise normal. The right optic nerve is still a little paler than the left on the temporal side, but the vessels are normal. There is now not the slightest contraction of the color fields. Hearing in the right ear seems to have decreased so that he now hears only in contact.

This patient, from all indications, had sustained a fracture at the base of the skull, involving probably a part of the petrous portion of the temporal bone, and the paralysis of the abducens was due not to any laceration of the nerve, but rather to a hemorrhage. As this became absorbed, the function of the nerve returned.

282 Prospect street.

A CASE OF SYMPATHETIC OPHTHALMIA FROM IRIDECTOMY.

By Samuel L. Ledbetter, M. D.,
of Birmingham, Ala.

THE patient, a young girl, about 17 years of age, was brought to me by her father, February, 1894. She had cataract in both eyes. Complete in the right, incomplete in the left. Perception of light in the right, counted fingers at short distance with left. The cataract was soft and of general nature, coming on without any assignable cause. The patient's general health was good. I advised the needling operation, which was agreed to, and began at once with the right eye. After four operations the pupil was clear and the patient could read ordinary print with glasses readily. The operations were never followed by any complications and the result was perfectly satisfactory. In August of the same year the cataract in the left eye was ready for operation and a needling was done. In September a second operation was done, and the patient allowed to go to her home in an adjoining county. This I had not allowed before. She was gone a month and when she returned I found that there had been an iritis following the operation. I had not been notified, nor had the atropin solution which I gave with the first operation been used. There was a complete synechia and occlusion of the pupil. The eye was treated until the inflammatory symptoms had all passed away, and then an effort was made to detach the iris from the capsule of the lens. I thought it was going to be a success, but the pupil would not dilate under mydriatics and the result was negative. When the irritation had subsided I did an iridectomy, hoping to get some relief in this way. The reaction was slight. The eye seemed to to be doing well. In February, 1895, I had my right arm broken at the wrist, and allowed my patient to go home again.

She came back in May, after an absence of three months. My coloboma was obliterated, and the pupillary margin drawn up toward the corneal cicatrix. There was considerable ciliary congestion of left, with serous iritis of the right eye. Ophthalmoscopic examination of the right eye was very unsatisfactory on account of the cloudiness of the media. The lower section of the cornea presented a triangular punctate appearance. There was some photophobia and slight sensitiveness to pressure in both eyes. The patient said that both eyes had been very sore, but as sore eyes were prevalent in the neighborhood she had not thought much of it, nor had the family thought it necessary to notify me. The question of enucleation was considered, but as the trouble had already existed in the sympathizing eye about a month, and the condition of both eyes had improved very considerably, it was not thought best to do it. The patient was kept under close observation for five or six weeks. For a while it seemed that the treatment was very beneficial, but the eyes continued to show some ciliary irritation; the punctate appearance of the cornea remained and the lymph deposit in the pupil of the right eye was getting more and more dense all the time. The 15th of June the offending eye became somewhat more congested and irritable, and after a consultation with my friend, Dr. Woodson, an immediate operation was advised. After the removal of the offending eye, the other cleared up very rapidly, and the punctate appearance of the cornea was soon gone, but the lymph deposit remains and the vision is considerably impaired. The patient counts fingers only at a few feet, but sees enough to get about comfortably. I hope to be able to improve the vision by a division of the membrane, when the eye has entirely recovered. This has been to me a very unfortunate case. I have never had just such an experience before. It is the first time I have ever had iritis from a needling, and the only time I ever had sympathetic ophthalmia from an operation of any kind.

This case illustrates the small amount of interest which some patients appear to manifest in their own welfare, and the necessity for the physician's keeping the patient under his immediate observation after any operative procedure.

THE VALUE OF SCOPOLAMIN HYDROCHLORAT IN TESTING REFRACTION.

By T. E. Murrell, M. D.,
of St. Louis, Mo.

OPHTHALMOLOGISTS have long looked for an ideal cycloplegic for refraction work, that is, an agent that will positively and absolutely suspend accommodation in a short period of time; that will cause no other disturbance of the ocular functions than that especially desired; that will give rise to no toxic symptoms or discomfort on the part of the patient further than the confused vision, and that will be of short duration. Atropin possesses the one element of positiveness of action, if used in sufficient strength and continued long enough, it usually requiring two or three days' repeated instillations of a 1% solution to totally suspend the accommodation. Its long duration, occasional toxic effects, and liability to increase intra-ocular tension in some subjects make it objectionable. Duboisin has been abandoned on account of the great danger of systemic poisoning when used of sufficient strength to fully paralyze the accommodation. In homatropin hydrobromat we have an agent that very nearly approaches the ideal cycloplegic. For a number of years it has been my constant and almost only reliance, an occasional case calling for atropin. I have become convinced, however, after a long and careful study of homatropin in hundreds of cases that it is not absolutely reliable as a paralyzant of the ciliary muscle. In fact, cases have come under my observation where it almost totally failed after repeated instillations. In at least 95% of cases, however, it

answers the purposes for refraction work admirably well. In addition to its somewhat uncertainty in effect it has several detracting qualities. One is, the short intervals and frequency of the instillations required, drawing heavily upon the time and attention of the busy practitioner. Another is, the very short duration of its maximum effect, which is usually reached in seventy-five to ninety minutes from the beginning of the instillations, and begins to decline one or two hours later. When I have been unavoidably delayed an hour or two after the patient should have been ready for the test I have sometimes found a returning accommodation. One of the greatest objections to homatropin is the irritation it produces in the eye. It is claimed that it congests the choroid. At any rate the bulbar conjunctiva is invariably deeply injected by the time the instillations are finished from its local irritating effect, and the patients almost invariably complain of much distress and discomfort in the eyes for the remainder of the day on which used. Some persons have been loud in their complaints to me of the deep aching and discomfort in the eyes after its use. For reasons that are obvious from the foregoing I was ready to welcome a cycloplegic that might prove more satisfactory than any we have hitherto known. Hence it was, after reading Dr. Arthur G. Hobbs' article in *The Refractionist*, and later receiving a reprint from him with additional experiences with *scopolamin hydrobromat* that I determined to make a test of it. Dr. Hobbs points out the very powerful toxic properties of scopolamin when used in too strong solution. To obviate this great disadvantage he endeavored to find the point where its cycloplegic effect would still be maintained and its systemic toxicity lost. He found it quite free from systemic effects when of less than one-fifth of one per cent strength, while its cycloplegic effect was positive as low as one-eightieth of one per cent. To be within safe bounds as to its toxic effects and on the certain side as to its cycloplegic properties, I have used one-tenth of one per cent solution in all my cases tested thus far. It keeps well, my solution, containing 10 grains boric acid to the ounce, is as clear and free of mold as when put up seven weeks ago. To make sure of my tests I have used it only in my office on my private patients, so I could

observe them more closely than dispensary patients. I have now used it fifty-seven times, in both eyes in every instance except one. With a small pointed pipette a drop—about a fourth of a minim—is let fall on the upper margin of the cornea. In fifteen minutes this is repeated. In one hour from the first application the eye is ready for the examination. In ten minutes from the first drop the pupil shows dilatation and almost at the same time near vision shows slight confusion. In five more minutes the pupil is widely dilated and the patient is unable to read small print at 12 inches. Paralysis of the accommodation follows rapidly and I have seen no case in which I had any evidence of want of total suspension of the accommodative function at the end of one hour from the first instillation. While I have not tried it, from the very speedy effects of the first drop I am not so sure but the second drop may be, in most instances, unnecessary. Dr. Hobbs directs that the head be tilted so the drop will not enter the tear duct. This may be necessary with the stronger solutions, but I have paid no attention to this rule with my one-tenth per cent solution, and I have had no systemic poisoning in a single case, unless we except a little boy 4 years of age who resisted putting the drops in his eyes, so I had to hold his head between my knees and in his struggling I flooded his eyes and allowed it to run freely into the tear ducts. In this instance the face became very much flushed, resembling the effects of atropin so often seen in children.

There is no evidence of a particle of local irritation, for the ocular conjunctiva is not injected in the least, but rather, it has occurred to me, it is paler than normal, causing the sclera to appear whiter than before its use. Ocular tension seems to be in no way modified. The patient complains of no discomfort whatever, further than the inability to see well. I have not been able to follow my cases closely to the end, but there is evidence of returning accommodation in twenty-four hours in some cases, and in forty-eight hours in all, and in seventy-two hours reading ability has returned almost invariably. It seems to be very uniform in its action, both as to the inception of paralysis of accommodation and as to its disappearance. Homatropin is not so, it persisting in some persons

four or five days, whereas in others its effects have nearly passed off in twenty-four hours. You can safely tell your patient, after the use of the one-tenth of one per cent solution of scopolamin, that he will be able to read in seventy-two hours. While a powerful and reliable cycloplegic, scopolamin is also a most potent mydriatic, equaling atropin in this respect In only one instance did I try the effect of eserin on the eye just after the full effect of scopolamin had been obtained. A drop or two of a one-fifth of one per cent solution of eserin enabled the patient to read Jaeger 1 at 10 inches in twenty minutes while the pupil was still dilated *ad maximum*. In thirty minutes the pupil was decidedly contracted, but still not to the normal size.

While it lasts a little longer on the average than homatropin I have heard less complaint from the effects of scopolamin from my patients than from any cycloplegic I have ever used. An analysis of my fifty-seven cases brings out the following facts:

Age. The youngest person on whom it was used was 4 years of age, while the oldest was 45. In one person 44 years of age, it brought out a latent hyperopia of 1.25 D. in one eye and .87 5 D. in the other, and greatly modified the correction for a hyperopic astigmatism which I first determined as best I could without it. The ages varied all the way between these extremes. Just here, in parenthesis, I will say: after twenty years' experience my refraction work done under a cycloplegic in persons under 45 years of age is the only work of which I can feel perfectly assured when the patient leaves my office with a prescription for glasses.

Interval between instillation and examination. When convenient, one hour was considered long enough to wait from the time of the first drop, and this was the time at which the testing was begun in the majority of instances, but occasionally other work got in the way and the examination was deferred to one and one-quarter, one and one-half, two, three and more hours up to twenty-three and one-half hours—the longest interval between the instillation and examination in my experience. In this instance the result was satisfactory, though I think it safer to make the test under eighteen

hours. A patient may call in the afternoon and receive the drops and call the following morning for the test, or receive the drops in the forenoon and be examined in the afternoon. There are times when this convenience to both patient and surgeon will be readily appreciated by any ophthalmologist. In two instances I used it where I had formerly determined the refraction with homatropin. It modified the results somewhat, bringing out a 0.50 D. more hyperopia in one instance, the patients getting more comfort from the changed formulæ.

The following case is of interest, both from the stability of the suspended accommodation during the first twenty-four hours and from the rather unusual angle of the axes of the cylinders:

Miss R., 20 years of age, had worn many glasses from specialists and opticians with little satisfaction. V. = $\frac{15}{200}$, either eye. Kerotometer, ophthalmoscope and shadow test showed a high degree of mixed astigmatism. Scopolamin, one-tenth of one per cent. Examination in one hour. Succeeded in approximating correction, but was not satisfied with it. My time was up and I had to stop and ask her to call the next day. Forenoon next day, twenty-one hours later, I renewed the examination. There was not the slightest fluctuation of accommodation. The following formula was soon worked out, which gave her vision $\frac{15}{10}$, either eye: O. D. + 2, C. 105° ⌒ − 3, C. 30°; O. S. + 3, C. 75° ⌒ − 4, C. 165°. After the return of accommodation she could read J. 2 readily with these and J. 1 with some effort. She seemed delighted, saying she had never before in her life seen so clearly. No other combination would give half so good vision for right eye as the crossed cylinders with their axis 15° from a right angle.

It is unnecessary to report any further details of the fifty-seven cases thus far tested under scopolamin They are of the usual type of cases, chiefly of astigmatism, simple, compound and mixed, that are met with in daily practice. So far, not a case has required a second examination, and, as it is my rule to follow my refraction work for some weeks, nothing but entire satisfaction has thus far been heard from any of the fifty-seven persons.

My observation would lead me to believe, therefore, that the one-tenth of one per cent solution of hydrobromat of homatropin is absolutely positive in its control of accommodation, and therefore reliable from one to twelve hours after instillation. It possesses the following advantages over any other cycloplegic with which I am acquainted: In proper strength, it is non-toxic; it is absolute in its control of accommodation; it is the least trouble of any to use, requiring less time and attention of the surgeon, and never requiring to be given out like atropin; it is convenient in that the examination can be made at any time agreeable to surgeon or patient within twelve or more hours; it keeps well and lasts long, one grain being enough to test the refraction of 500 persons. While its duration is some longer than homatropin, it is very little, and is a wonderful shortening of the time compared with atropin. While I still recognize that we have not the *ideal cycloplegic* in scopolamin, I am confident, from my present experience, that it is so far the *best we have*. It may be that the weaker solutions, with which Dr. Hobbs is experimenting, may show further advantages in shortening the duration of paralysis. With the one-tenth of one per cent solution I am exceedingly well pleased, and am daily using it.

THE FORMATION OF THE STUMP AFTER AN ENUCLEATION.

By George F. Suker, M. D.,
of Toledo, Ohio.

THIS may and may not be a new method to obtain a good stump, after an enucleation of the eye, yet, as I have never seen it mentioned in any of the text books, I take the liberty of noting it here.

The *modus operandi* is as follows: Prepare the field of operation as is your custom; divide the conjuctiva as close to the cornea as possible, dissect it as far back as permissable; do the same with the capsule of Tenon. Cut the recti muscles as close to their insertion as possible. Insert into each rectus muscle a black silk suture at the time it is cut. This is to act as a guide. Proceed now as is customary, *i. e.*, severing the nerve and oblique muscles. After removing the eye, take a thoroughly sterilized catgut suture and pass it through the severed end of the rectus externus and internus, which have previously been brought together by the silk suture guides. Now bring the superior and inferior recti down and pass a catgut suture through them. Finally suture the four together and remove the silk guides. Thoroughly irrigate your cavity with sterilized water. At the last bring the conjunctiva from above and below over the muscle stump and suture same with a continuous suture, but be sure you fasten it to the muscle stump. The use of the catgut sutures for the muscles is quite obvious, while you may use silk thread or catgut on the conjunctiva. Leave only a small part unsutured at either canthal end of the conjunctiva as a provisional drainage opening. Again thoroughly irrigate, and

dust the whole with iatrol and bandage in the usual manner. Apply an ice bag immediately after the operation for one or two days to allay, if possible, any local inflammatory reaction which might supervene. Otherwise treat the case as is your custom in such operations. If, perchance, extensive suppuration should occur, remove every suture and treat accordingly. You will, if everything acts properly, have union by first intention, and the result will be an excellent prominent stump upon which an artificial eye will fit exceedingly well. This stump permits of much freer movement of the shell than any other, and then, too, it does away, more or less, with the extreme sunken appearance of the socket after an enucleation. By this method you are apt to preserve a much better caruncle than is obtained by the other operations, thus doing away with the spherical appearance of the shell.

Panas mentions the suturing of the conjunctiva, but not of the muscles.

This method I have employed in three consecutive cases, with very satisfactory results. Whether or not I had exceptionally favorable cases for operation, I do not know, I took them as they came; and whether it is applicable or not in any given case must be left to the discretion of the operator.

PULSATING EXOPHTHALMOS.*

By V. T. Churchman, B. S., M. D.,
OF CHARLESTON, W. VA.

SECRETARY CHARLESTON MEDICAL AND SURGICAL SOCIETY OF CHARLESTON, W. VA.; VICE-PRESIDENT WEST VIRGINIA STATE MEDICAL SOCIETY; VISITING OPHTHALMIC SURGEON TO THE WEST VIRGINIA SCHOOL FOR THE BLIND, ROMNEY, W. VA.

I HAVE given the above title to my paper because I have, thus far, been unable to make a better diagnosis. Not being able to state positively what I have had, I can only call it by one of the most prominent symptoms. While we may have our beliefs and unbeliefs concerning a pulsating exophthalmos, yet, we have no positive method of determining whether it be due to aneurism of the ophthalmic, of the internal carotid, or an aneurism by anastamosis.

Mrs. W. H. B., 44 years of age, was sent to me by Drs. Parks and Shirkey, of Malden, W. Va., on March 15, 1895, with this history: Five or six weeks ago she had a severe spell of *neuralgia* just back of the left eye, which lasted about two weeks, when this was at last relieved, she found her eye was *swollen* shut and unable to open it; since the neuralgia stopped she has only suffered with pain when she would lie down, and this has been so severe that she has been unable to sleep without large doses of morphin; also complained of very loud noise in her ears, but much worse in the left; it was made worse by lying down; stooping forward increased the protrusion, the fullness of the vessels and the pulsation. She has used *poultices* of all descriptions without any relief, and

*Read before the West Virginia State Medical Society, at its annual meeting, June 27, 1895.

as the *swelling* continued, she consulted the above named physicians, who referred her to me for examination and treatment.

The lids were entirely closed, blood vessels on outer surface very large and tortuous, absolutely no inflammation. There was paralysis of the left levator palpebra, ball pushed forward very much, and a decided pulsation could be felt the moment the eye was touched; medium dilatation of the pupil, which failed to react to light, showing a complete paralysis of accommodation, there was also complete paralysis of oculo-motor nerve. Vision in this eye = $\frac{20}{50}$, while that of the right eye was perfect.

There was a false projection of the field of vision to the inner side, as well as exaggerated in the entire field.

Ophthalmoscopic examination revealed only a slight hyperemia of the retina; but veins were enlarged and tortuous.

By use of the stethoscope a bruit could be heard over the entire head, but greatly intensified just over the ball.

The oculor and palpebral conjunctivæ were traversed by large and tortuous veins.

There was also paralysis of the external rectus muscle of the right eye.

All of the subjective symptoms could be modified by pressure upon the left common carotid artery, a procedure which also caused the protruding globe to slightly recede and lessened the strength of the pulsations. Pressure upon the globe would also cause it to recede to a slight extent.

All of the symptoms, whether subjective or objective, were intensified by any mental excitement or physical exertion.

As for treatment, I advised quiet, arterial sedatives and potassium iodid in increasing doses, and to report at the end of ten days.

March 25, 1895. There has been no perceptible influence exerted upon the orbital lesion and I advised the ligation of the left common carotid.

March 26, 1895. I ligated the artery at 3 P. M., assisted by Drs. Schoolfield, Longstreth and Staunton. I tied the artery just above the omo-hyoid muscle without any accident. The common carotid, in this case, was further back than normal,

that is, it was about two-thirds under the sterno-cleido-mastoid instead of being at its edge, at this point. She took ether well; pulse full and strong and no vomiting. The sheath was reached and the ligature needle carrying a double No. 2 catgut passed without difficulty around the artery, tied and cut off short. Having used all antiseptic precautions during the operation, the wound was closed tightly with eight silk sutures, after first bringing the deeper structures together with a small catgut suture. The protruding eye sank very rapidly and was almost normal within six or eight hours.

It may be of interest to know that, just before ligating the artery, I passed the handle of my scalpel under the artery, and, by sufficient pressure, could stop the pulsations in the eye altogether.

At 8 P. M. Pulse, 72; temperature, 96½°; was suffering very much, and gave her one-fourth grain of morphin hypodermatically.

At 3 A. M. Morphin was repeated. She suffered intensely with coldness on the left side of her head, for which hot bottles were used.

March 27, 1895, 9 A. M. Pulse, 76; temperature, 98½°; no bruit could be heard and no pulsation felt. Still complaining of her head being cold, but she could hear no noises.

There was some amnesic aphasia which, I think, was due to cutting off the blood supply from Brocher's speech center. Ordered liquid diet and whisky every few hours.

March 28. Pulse, 84; temperature, 99½°; no pain and feeling good; wanted to sit up. Ordered a light diet.

March 29, 5 P. M. Pulse, 92; temperature, 100°; was a little restless during the night, and had to give her a dose of sulfonal.

March 30. Pulse, 84; temperature, 99½°. She said she heard a faint roar about noon to-day, but that it only lasted about five minutes and then disappeared. No pulsation could be felt, but a faint bruit could be heard just over the ball.

March 31. Pulse, 96; temperature, 99½°; condition the same as yesterday. Removed the dressings for the first time and found the wound had healed by first intention. Allowed her to sit up.

April 1. Pulse, 76; temperature, 98½°. Neither the pulse nor temperature went above normal after this. Removed sutures on April 2, and on April 6 she left the hospital for her home. Vision is normal with a Sph. + .50 D. lens. A very faint bruit could be heard, but no pulsation felt, nor could she hear any noises. I again ordered increasing doses of the iodid of potassium with bichlorid of mercury and also small does of sulfat strychnin.

April 15. She is taking thirty-five grains of the iodid of potassium three times daily with slight physiological effect. There is slight improvement in the action of the levator palpebræ, superior rectus and internal rectus muscles, as she is able to partially raise the lid, and with much effort rotate the ball inward and upward. I directed her to increase the iodid by one drop of the saturated solution each day and report again in ten days. The bruit is about the same as when here last.

April 26. Condition has greatly improved, as the eye is about two-thirds open and there is more movement in the ball. The physiological effects of the iodid are very pronounced, and stopped it and put her on an emulsion of cod liver oil with the iodids of arsenic, calcium and manganese.

May 28. There has been continued improvement since April 26, she now has perfect motion of the levator palpebra and almost perfect motion of the ball itself. There is still a slight bruit, but not so much as a month ago, and there is still no pulsation. Vision is $\frac{20}{30}$, and made perfect by the addition of a Sph. + .50 D.

I have been unable to find any cause whatever in this case. No history can be obtained of syphilis, rheumatism or injury; has never used alcoholic drinks of any kind.

One peculiar feature of this case is the fact that she has never recovered any use of the external rectus muscle of the right eye.

In conclusion, let me state that in all cases of aneurism of the internal carotid, or of rupture of the internal carotid within the cavernous sinus, that I have been able to find, the ball has been pushed forward, downward and inward, while

in this case the ball was pushed directly forward and could not be rotated either upward, downward, inward or outward, but was as fixed as if it were held in a vise.

As I stated in the beginning, it is impossible to make a diagnosis without a post-mortem, and I am glad to state that I have not had an opportunity for such procedure in this case; yet, I believe I have had a case of anueurism of the ophthalmic artery.

For very exhaustive information on this subject, I would refer to an excellent article by Dr. Robert Sattler, of Cincinnati, Ohio, in the *Medical Record* of June 13 and 20, 1885.

NOTES ON THE RECENT MEETING OF THE GERMAN OPHTHALMOLOGICAL SOCIETY.

By Casey A. Wood, M. D.

Heidelberg, August 7, 1895.

THE twenty-seventh meeting of the *Ophthalmologische Gesellschaft* has just ended after a very successful session. The attendance was quite up to the average, there being over 100 German and French members present, but in point of numbers, England and America were very poorly represented. From the former country, however, came Argyll-Robertson, who acted as chairman of the ordinary meetings during a portion of the time. The name of Dr. Oliver, of Philadelphia, was down for the only English paper on the list, but he was not able to attend, and as far as I know his communication was not presented to the society.

In addition to the usual array of faces, I noticed those of three ladies—Frau Rosa Kirschbaum, of Salzburg, and her two assistants. A reference to the Knapp-Schweigger *Archiv. f. Augenheilkunde* of about three years ago will discover a long and instructive account of several hundred cases of cataract extraction performed by this (in many respects) wonderful woman, which by itself might constitute her right to membership in the society.

There was at least one Japanese member present, who, notwithstanding certain lingual difficulties, presented a paper in German. It was quite noticeable that, as a rule, the Frenchman or Englishman speaking German, or the German essaying French, was much more easily understood than when any of these addressed the meeting in his mother tongue. Defects in delivery were not confined to Germans, but there were some conspicuous and illustrious examples of this nationality who conversed with their "inner consciousness" in tones that could not possibly be distinguished as words more than a couple of meters from the speaker.

Last Monday evening a very jolly and well attended dinner was held at the Schloss Hotel, away up on the mountain side, overlooking the beautiful and picturesque valley of the Neckar below. Tuesday afternoon a number of members visited, by invitation, Prof. Leber's public Augenklinik in the Bergheimer Strasse, and in the evening Professor and Frau Leber gave a dinner and reception in their private house. This was a very enjoyable affair, and served, in part, to celebrate the decoration which the head of the house had recently received.

In addition to the names already mentioned, I noticed among the members the well known faces of Snellen, Wagenmann, Hess, Schirmer, Dor, Kalt, von Hippel, Berlin, Meyer, Oswalt, Schweigger, Uhthoff, Haab, Pagenstecher, Zehender, Michel and Silex.

The sessions begin at 9 o'clock in the morning; there is a recess of two hours at noon, and a second meeting in the afternoon. Most of the papers were illustrated by drawings and microscopical preparations, generally the work of the reader. Surely drawing and water-color painting should be a part of the education of every ophthalmologist. Then by a sort of "*Ruckwirkung*," every medical school may come to see its way to requiring some knowledge of these arts as a preliminary to further study.

I was much interested in the discussion of a paper on the operative treatment of certain forms of high-grade myopia—by removal of the lens. The majority were in favor of the operation in those cases where the fundus changes were few and outside the macular region, and where the symptoms were not relieved by glasses or by other treatment. The loss of the power of accommodation and the possibility of retinal detachment (which had occurred in a number of reported instances) were the principal drawbacks set forth by the speakers. It was advised, among other precautions against the latter accident, to proceed very slowly in needling the lens, and if possible to prevent any sudden escape of aqueous. When this does occur, and especially if the rent in the capsule be large, the lenticular mass comes suddenly forward into the anterior chamber and may determine a separation of the over-stretched retina from its underlying bed. One speaker mentioned a case with 5 or 6 diopters of myopia which, after lens removal, was converted into 7 diopters of hyperopia! It

was quite properly objected that the second state of that patient was worse than the first. One speaker offered an explanation of the very different refractive results (which range all the way from 12 D. to 20 D. or even more) following removal of the lens by a difference in the depth of the anterior chamber, *i. e.*, in the distance between the cornea and the anterior capsule in different cases. It was also pointed out that as a result of the constant accommodative efforts, which some myopes make for years at a time, the lens may lose its ordinary bi-concave appearance and take on a more globular shape, and thus to a great degree neutralize the total myopia. After the removal of such a crystalline, the difference between the total ante and post-operative myopia will be greater than in those cases where the lens has not undergone such changes of form.

There is, however, another agent at work in these cases which was not spoken of, and which I offered (when Fukala's first cases were published) as, in part, explanatory of apparent variations in the refractive value of the myopic lens. This refers to a general contraction of all their coats which certain highly myopic eyes undergo after the removal of the crystalline. Such eyeballs are, in consequence of this contraction and *after* the healing of the wounds of operation, smaller eyeballs than they were *before* it. The stretched and stretching ocular coats resume something of their normal condition when the pressure upon them is removed and the eye is brought into a state of rest.

Kalt, who is particularly known for his advocacy of the corneal suture after cataract extraction, read a very enthusiastic paper on the use of the douche as the sole treatment of most forms of acute infective conjuctival and corneal disease, including trachoma. He employs commonly a small glass bulb, shaped like the neck and mouth of a common bottle, to the former of which is attached rubber tubing and a reservoir. The conjunctival sac is, by means of this simple appliance, thoroughly flushed with various mild antiseptic solutions as often as seems necessary. The writer claimed extraordinary results from this treatment, although the essential part of it is not new. It seemed to some of the members that the

manipulation of the lids and eyeball with the glass apparatus is fraught with danger of abrading the corneal epithelium.

The paper of Uhthoff on various forms of keratitis was interesting as showing, in the reported cases, the ravages made by the streptococous and other microbes upon the anterior parts of the eye. These were illustrated by beautiful drawings of the microscopical preparations.

I hope with the next number of the ANNALS to publish abstracts of some other papers that will be of interest.

I made it my special duty at the congress and elsewhere to ask an opinion, of those who had given the method a trial, as to the remedial value of subconjunctival injections of sublimate. On the whole that opinion has proven unfavorable. It was conceded that in some cases of scleritis and episcleritis, whatever their nature, the remedy acted promptly and satisfactorily in cutting short what is so commonly a tedious and vexatious disease. In other cases of the kind it was valueless. I was told of and shown a number of cases of iritis which, proving stubborn under routine treatment, yielded promptly to two or three injections. In the deeper lesions, specific and non-specific, especially in choroidal changes which were at first regarded as particularly amenable to this kind of medication, very few would say that it did any lasting or appreciable good. Moreover to most people the sublimate injections are quite painful and notwithstanding statements to the contrary, I noticed that even public patients in those countries where complaint is rare, did not act as if they were very happy after receiving a dose, and usually said something about it. In fact in the case of these chronic organic vitreous, choroidal, retinal and optic lesions for which patients travel about from klinik to klinik in the hope of relief, this treatment serves very well as an experiment. As a distinguished ophthalmologist replied to my question as to their value in such apparently hopeless cases: "*Il est parfois necessaire de faire quelque chose.*"

I cannot refrain from referring to the recent death of Moos, so long Professor of Otology in Heidelberg University. His contributions to the study of aural diseases, and especially to their pathology, form no small part of the whole record and it will not be easy to fill his place.

CLONIC BLEPHAROSPASM, OF HYSTERICAL ORIGIN, IN A MALE.

By Wendell Reber, M. D.,
of Pottsville, Pa.

HYSTERIA in females has been so thoroughly studied, especially by the French, that our knowledge of the subject is relatively complete. Within recent years hysteria in males has been more noticed, and additions of this kind are now being constantly made to the literature of medicine.

Among the multitudinous signs and symptoms of hysteria blepharospasm appears infrequently. In most of the text books, ophthalmic and neurologic, mention is made of its occurrence in females, but the topic is usually dismissed with a few general observations.

The following case history is presented, with the feeling that anything which may facilitate diagnosis in this most perplexing of all functional diseases must be welcome:

March 11, 1895. Henry K., a frail, diffident youth; general condition rather poorly nourished; vegetative functions moderately well performed; family history fair. No neurotic tendencies could be made out. Patient gives a history of ophthalmia neonatorum in infancy, resulting in extensive corneal scars. As he grew up it was found he had sufficient vision to permit reading of large print with difficulty. Two years ago he submitted to upward iridectomy in both eyes, which increased his vision three fold and enabled him to intermittently pursue a little study. The latter he has overdone during the past two months. Seven days before coming under observation, without any precedent pain or inflammation, he lost all power over his orbicularis muscles and his eyes were closed for

several hours. On the second day afterwards they closed again and remained so for four days. On the following day they began to open, and it was at this time I first saw him. Condition at that time: O^2. There is still present a clonic partial orbicular spasm, rendering the full opening of the eyes difficult on account of the energetic action of the orbicularis. The conjuctivæ are hyperemic, corneæ opaque centrally, but smooth and devoid of irritation. O. S., adherent leucoma. Tension in both eyes doubtfully increased. Vision, O. D. $= \frac{2}{60}$; O. S. = hand movements at 2 feet. Patient was of an impressionable nature, and in the absence of pain or any other sign proportioned to the apparent gravity of the case, I suspected hysteria and ordered a placebo.

March 21, 1895, ten days later. Opens eyelids without any difficulty. Refraction without mydriatic, O. D. + 1.00 D. Sph. ⊂ — 3.50 D. cyl. ax. 140° $= \frac{5}{30}$; O. S., no glass improves. Correction of O. D. given for constant wear.

Three months later appeared, saying that for four weeks, one or the other eye has been closed once daily for periods averaging from one-half to two hours. The orbicular spasm is to-day in O. S. complete and clonic. The lids can be separated only by the exertion of considerable force with the fingers. Treatment: Constant current for ten minutes over each eye, anode at nape of neck, cathode over eyelids.

Three months later. Has had no recurrence of the orbicular spasm.

The nature of the affection is plain. Such a result from one brief electrization could occur only in hysteria, and as the outgrowth of a profound psychic effect. The case presents two interesting points:

1. The occurrence of clonic hysteric blepharospasm in a male, there being no analagous instance recorded in the literature at my disposal.

2. The occurrence of unilateral blepharospasm. Most authors refer to the phenomenon as a bilateral one. Fuchs, in his vast experience, has seen the unilateral variety but once. He reports the case of a girl who suffered with blepharospasm of this sort, whom he had treated with different remedies in vain. He was finally successful in relieving the blepharospasm by means of a single instillation of cocain, but a few minutes after the girl had opened her eye both legs became paralyzed and remained so for several days.

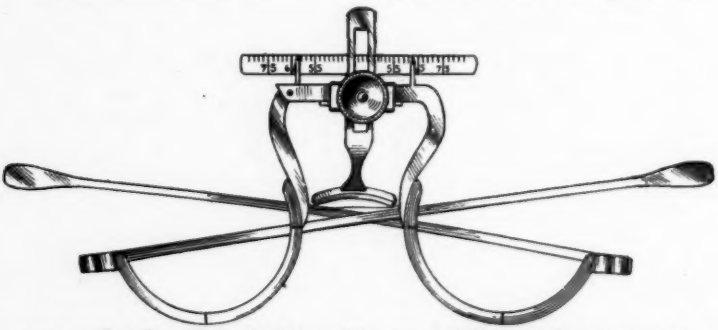
In my own case the blepharospasm, at first bilateral, became distinctly unilateral in the second attack. It is my belief that in this as well as other allied hysteric manifestations in the visual sphere, medicines are to be discarded for galvanism, which, in addition to its psychic effect, affords an efficient method of applying a soothing influence to an overacting muscle. In the event of failure with electricity, I would be tempted to employ therapeutic suggestion as pointed out by Dr. Booth, of New York, to whose article (in the neurologic abstract), in this number of the ANNALS, the reader is referred.

DESCRIPTION OF AN IMPROVED FORM OF TRIAL FRAME.

By Charles A. Oliver, A. M., M. D.,
of Philadelhpia, Pa.

one of the attending surgeons to wills eye hospital; one of the ophthalmic surgeons to the philadelphia hospital; consulting ophthalmic surgeon to st. agnes and st. timothy hospitals, philadelphia, etc.

In November, 1893, the writer had Mr. Wm. S. Yarnall, of 1406 Chestnut street, Philadelphia, make him a model of a trial frame that could be used by office patients to test muscle equilibrium and to temporarily try the effect of test lenses in various combinations before the regular formulæ for spectacles



were ordered. This device, with some additional improvements by Messrs. Reimold and Meister, of 41 North Thirteenth street, in this city, constitutes a contrivance that has been almost steadily and satisfactorily employed in the writer's practice for nearly two years' time, thus giving the apparatus a sufficient trial to determine its value and to make its mechanism as complete as possible. As now constructed, the frame has been made to subserve many more purposes than were originally intended. As can be understood, by reference to the accompanying wood cut, the frame consists of a wedge of brass, to the back part of which is fastened a double inter-pupillary gauge, thus allowing separate measurements for

both eye pieces. Running through this wedge there are two thin, flattened arms, each connected with its own eye piece. At the end of each arm there is a projecting knob, which prevents the arm from sliding completely out of the wedge. On the arms, at points quite near the beginnings of the related eye pieces, there are two upright indicators which designate the degree and position of lateral separation of the test lenses when held in their proper positions in the frame. Cut into the front face of the wedge, there is a double slot in which a fenestrated upright holding the nose piece can be slid vertically and retained at any desired position by a nut and screwhead. This upright is also gauged, thus giving the degree of vertical variation necessary to be used in each special case.

The rings which hold the test lenses are so grooved that any test lens can be fitted in and revolved by the hand with the greatest facility.

For the simultaneous employment of additional lenses, there is a series of three fine hooks fastened to both the anterior and the posterior faces of the rings.

The temples of the frame have been made straight, broad and long, so as to adapt themselves closely to the temples of the patient. The whole mechanism is so light that it weighs but little more than a half ounce.

The advantages of this test frame over others of its kind may be enumerated as follows:

1. The extreme lightness and durability of the contrivance.

2. The concentration of the working portions in and around the central wedge.

3. The simple mechanism by which an independence of lateral movement in its two sides can be made, thus allowing correct horizontal centering and absolute gauging for each eye.

4. The great lengths and shape of its temples, by which, when properly applied to the head of the patient, the frame is securely, though lightly attached.

5. The simplicity in shape and ready method of working of the nose piece, thus permitting an easy and quick vertical adjustment of the contrivance to be made.

6. The simple, durable device by which spherical and cylindrical form of lenses as well as prisms and other optical contrivances, such as stenopaic slits, tinted glasses, etc., can be employed to their greatest advantage.

Messrs. Reimold and Meister are now prepared to furnish samples of this instrument in its newest and best form.

EMORY UNIVERSITY
THE A. W. CALHOUN MEDICAL LIBRARY

CLINICAL MEMORANDA.

THREE CASES OF EYE DISEASES OF DENTAL ORIGIN.*

By A. A. Foucher, M. D.,
of Montreal.

Case I. A man, 50 years of age, whose right eye became inflamed after a simple exposure to cold. Upon examination a few days afterwards, a series of small vesicles were to be seen on the upper external margin of the cornea, with both conjunctival and scleral injection.

The tension of the diseased eye was under the normal: the sensibility of the cornea was by no means lessened. Over the orbit, a little above the eyebrow, in the direction of the ascending branches of the frontal nerve, there was a row of small dots, scars and vestiges of opened vesicules. At the same place and a little further, all along the nerve, an exquisite sensibility, exaggerated by the least pressure, was to be noticed.

No cause other than that of entering an ice house and taking cold could be given by the patient to explain his present state. Upon examining the mouth, a large decayed and half-broken molar was spotted as the seat of often repeated aches, specially when in contact of cold water or suckets.

The following treatment was resorted to: Quinin, collyrium of atropin, iodin and morphin to be applied along the frontal nerve and its branches. Eight days under the above treatment still leaves the conjunctiva highly injected with a slight decrease in the inflammation of the cornea. The eye and the orbit are still painful.

---

* L'Union medicale du Canada, Aout, 1895.

The decayed tooth is extracted. The following day the patient is completely relieved from pain. Four days after, the eye is pronounced cured.

Case II. A woman, 51 years of age, reveals neuritis of the left optic nerve; at a distance of two feet the patient can hardly distinguish her fingers. R. E. V. = $\frac{5}{6}$.

The left orbit is quite tender. Three decayed teeth are to be seen on the left side of the upper jaw, and two on the same side of the lower. There is also osteoperiostitis of the sockets of the teeth with formation of matter. The decayed teeth are extracted, an antiseptic mouth wash is given, peroxid of hydrogen is used to cleanse the gums, oleate of mercury is given in frictions, and iodid of potassium is administered.

After eight days treatment the patient can see $\frac{5}{60}$ with L. E. The same treatment is continued for a few weeks without any further improvement. After six weeks the papilla can be clearly distinguished and presents the appearance of consecutive atrophy.

Case III. The most interesting is that of a girl, 21 years of age, seen December 16, 1893. She had lost the sight of her right eye and suffered great pain in the same. The ophthalmoscope reveals optic neuritis in the right eye. Periostitis was clearly indicated by the pain that was called forth by the least pressure on or around the right orbit. The right eye was completely blind, light itself could not be distinguished. She had just recovered from an attack of typhoid fever. (?) Her courses are frequent and abundant. No trace of any constitutional disorder can be found.

The loss of sight in the right eye coincided with the beginning of pain in the socket.

The teeth being irregular and not in the best state seemed to be the only cause to explain periostitis of the socket of the eye, and the neuritis of the optic nerve and blindness. The patient is directed to a dentist for a thorough examination of the teeth. A wisdom tooth is incriminated and immediately extracted.

The next day a telephone message announces a sudden change, the patient begins to see her fingers and suffers much less. At three feet she can distinguish objects, and all pain has left the orbit except in the lower part of it. Treatment: Mercurial frictions and iodid of potassium internally.

On February 12, V. = $\frac{5}{15}$.

On February 28, V. = $\frac{5}{7.5}$.

On March 12, V. = $\frac{5}{5}$.

Since then the patient has been seen occasionally and her sight is normal.

This last observation is the most interesting for it clearly and forcibly demonstrates a relation from cause to effect between dental caries and neuritis of the optic nerve. It is also a proof in favor of an immediate intervention, that not only stays the progress of neuritis, but also restores the functions of the optic nerve. The second observation seems to be analogous to the last, in so much as the trouble, though existing for some time before the extraction of the decayed tooth, subsided immediately after intervention leaving a consecutive atrophy due to the too long irritating effect of the tooth on the orbit and the optic nerve, that had underwent too pronounced an alteration in its structure to be restored to health.

The conclusion to be drawn from the above facts, and from several others of much the same kind, is that the teeth must always be closely examined every time that the eye, ear, nose, throat or adjoining sinuses are to be treated. By overlooking such an examination one deprives himself of precise indications to ascend to the cause of the disease and leaves aside a powerful help in the appropriate treatment of such.

ABSTRACTS FROM AMERICAN AND ENGLISH OPHTHALMIC JOURNALS.

By Charles H. May, M. D.,
of New York.

PRELIMINARY REPORT ON SIX HUNDRED AND TWELVE CASES OF CONVERGENT SQUINT WITH SPECIAL REFERENCE TO THE FINAL RESULTS OF OPERATION.

Charles Stedman Bull, M. D., New York (*New York Medical Journal*, August 24, 1895). "Carefully tabulated statistical reports of the results of operations undertaken for the cure or improvement of convergent squint have formed but little part of the ophthalmic literature of the last fifty years; and this fact has produced in the minds of the profession at large, and especially in the minds of some ophthalmologists, the feeling that the operation of tenotomy for the cure of squint is of doubtful value in many cases. The absence of useful, working statistics on this point, has, no doubt, been largely due to the fact that it is extremely difficult to follow out these cases for a sufficiently long time after the operation, because the patients are so easily lost sight of, especially if they be hospital cases, and the first operation has proved only partially successful.

"The feeling that operative procedures for the cure of squint are of doubtful value in many cases arises largely from the discrepancy in our ideas as to what constitutes a 'cure' of convergent squint. If by 'cure' is meant merely the removal of all visible disfigurement, with apparent restoration of parallel axes of the eyes, then the results of operation should be deemed very satisfactory. But if something more is meant, and we understand by the word cure not only the apparent restoration of parallel axes, but the improvement of vision in the squinting eye, the establishment of binocular vision, and the ability of the patient to use the eyes for all purposes except close work, without correcting glasses, then our ideas of the value of tenotomy must be materially modified.

"So wide is the difference of opinion among ophthalmologists as to the existing conditions in squint, the value of operative interference, and the nature of the operation which is to be done, that the writer has long held the view that the whole subject of strabismus is the least understood by modern ophthalmologists in the whole domain of ophthalmic science. We need but glance over our text-books and the contents of our journals to be readily convinced of the truth of this statement. Leaving entirely out of consideration the different views that are held as to the nature and causation of squint, there are many of our colleagues who question the wisdom of operating in early childhood, while others hold that in many instances no operation is necessary."

Dr. Bull then gives considerable statistical detail which he reviews as follows:

"A cursory review of the final results of the operation on the degree of the squint would lead the surgeon to believe that the greatest effect is to be expected from tenotomy of the internal rectus, and advancement of the external rectus of the squinting eye, and that the method of operation by simultaneous tenotomy of the internal recti of both eyes is the least valuable. A more careful study of each case, however, has led the writer to the formulation of the following conclusions, which may be modified by lapse of time and a larger experience:

"1. If the squint is in one eye, and of the alternating variety, there is usually very little amblyopia in either eye and but little difference in the refractive error of the two eyes. In the majority of these cases free tenotomy of the internal rectus of the eye which usually squints, with immediate full correction of the refractive error, will give as a final result, either apparent parallelism, or such a slight degree of convergence as is not noticeable under the glasses.

"2. If the squint is always in the same eye, there is almost always a decided difference in the refraction of the two eyes, and decided amblyopia in the squinting eye. In these cases, if there is no loss of power in the external rectus, the best results are gained by tenotomy of the internal rectus and advancement of the external rectus of the squinting eye, and subsequent full correction by glasses.

"3. If there is marked amblyopia in the squinting eye and some loss of power in the external rectus of the same eye, the best operation will be found to be tenotomy of the internal rectus and advancement of the external rectus of the squinting eye, and at a

varying period later tenotomy of the internal rectus of the other eye. Simultaneous tenotomy of the internal rectus of both eyes and advancement of the external rectus of the squinting eye is not a desirable operation in these cases, as it too often leads to permanent divergence.

"4. If, however, the squinting eye is markedly amblyopic and the external rectus of this eye is entirely paralyzed, the best results are gained by a simultaneous tenotomy of the internal rectus of both eyes and advancement of the external rectus of the squinting eye.

"5. In the emmetropic cases the best results are gained by tenotomy of the internal rectus of the squinting eye, followed at a varying period by tenotomy of the internal rectus of the other eye; the reason for this is not as yet apparent.

"6. There will always be a number of cases, by no means inconsiderable, in which it will be impossible to decide in advance what method of operating will be likely to give the best results, and in which what we do will be more or less a matter of guess work.

"7. Any complication which interferes with the visual acuity of a squinting eye, such as corneal macula, striæ in the lens, or extensive choroidal atrophy, must be regarded as pointing to the necessity of more extensive operative interference than simple tenotomy, even when no great refractive difference exists between the eyes and where no paresis of the external rectus is present.

"In studying closely these statistics of a considerable number of cases of convergent squint, one of the lessons taught is that though defective vision is probably one of the causes of permanent squint, yet the results of the operation are satisfactory in a very large number of cases. Another fact that becomes evident is that in a by no means inconsiderable number of cases, a tenotomy on the squinting eye is useless and we are forced to do a tenotomy on the other eye. Schweigger seems to be correct in saying that in the majority of cases periodic squint is cured by a simple tenotomy, and that an imperfect result can be supplimented by tenotomy on the other eye.

"The absence of fixation in the squinting eye in some cases of marked amblyopia renders it doubtful whether a satisfactory final result can be gained by any operation. Not a few cases may be found in which only slight improvement was gained even by tenotomy of both internal recti and advancement of the external rectus of the squinting eye.

"It should not be forgotten that a primary good result very often retrogresses, and surgeons do not sufficiently consider that the strength of the antagonistic muscle exerts a powerful influence upon the ultimate result of the operation. Apparent loss of power in the external rectus does not always mean actual loss of power, and Schweigger has some reason for recommending gymnastic exercise of the muscles by alternately turning the eyes to the right and left as a useful preliminary to the operation for squint. It is a mistake to suppose that advancement of a muscle immediately brings about a permanent position of this eye, for, as in simple tenotomy, the immediate result never remains permanent, but usually diminishes somewhat, though it may increase."

TRANSPLANTATION OF A STRIP OF SKIN INTO THE INTERMARGINAL SPACE OF THE LIDS.

H. Knapp (Report of the meeting of the Ophthalmological Section of the American Medical Association, 1895, *Ophthalmic Record*, July, 1895). In severe cases of entropion and trichiasis, good results can be obtained by an implantation of skin into the intermarginal space of the lid. The steps of the operation are as follows: (1) Ordinary canthoplasty. (2) Incision of the intermarginal space, according to Jaesche-Arlt. (3) Curved incision of the skin, 3 or 4 *mm.* above the ciliary border; removal of a small strip of muscle along this incision. (4) Grooving of the tarsus according to Streatfield. (5) Passing sutures through the lower lip of the wound, the upper edge of the tarsus and the skin of the upper lip. (6) Detaching from the upper lip of the wound, with a straight pair of scissors, a strip of skin 2 *mm.* broad, as long as the incision in the intermarginal space, and implanting it into the gaping and cleansed incision. Sutures may be used, but are not essential. (7) Tying these sutures, four or five in number, the threads may be cut short or stretched and fastened to the skin above the brow by collodion (Panas), or strips of plaster (Born), if the free edge of the lid is not sufficiently everted. (8) Dressing with bichlorid gauze greased with a salve, or leaving the eye uncovered. (9) Cutting the sutures in from three to five days, cleansing the eye every day, gently, so as not to disturb the implanted flap, which in almost every case unites in its whole extent. This plan of operating is to be simplified or modified according to the condition of the case.

CATARACT OPERATIONS BETWEEN THE AGES OF EIGHTY AND NINETY, WITH A TABLE OF CASES.

Hasket Derby, M. D., Boston (*Boston Med. and Surg. Journal*, September 26, 1895). Dr. Derby reports thirty-four cases of which he had records, with the following results:

"Entire success in twenty-nine cases (85%); partial success in two cases (6%); failure in two cases (6%); unrecorded, one case.

"Entire success was estimated at an amount of vision equalling one-tenth and over, the usual standard. The two partial successes had each a certain amount of useful vision. The two failures retained perception of light, but gained nothing by the operation.

"Patients of 80 and upwards form a very inconsiderable proportion of the cases of cataract that come within the experience of the average ophthalmic surgeon here in New England. According to my estimate, they amount to about 6% of the whole number. It would seem that 6% of total failure, large as it would be between the ages of 60 and 65, as contrasted with 85% of success, does not form a valid reason for denying the operation to those advanced in years. The use of cocain renders ether unnecessary, and the senile eye is, moreover, much less sensitive than in youth or even middle age. Under ordinary circumstances the confinement lasts but a fortnight, the patient remaining in bed only the first day. With a prospect of the recovery of sight as good as these figures show, is it right to allow a fellow-being to pass the last years of life in blindness, deterred from the operation by an unreasoning and unreasonable dread of the effect of extreme age on the result?"

THE ASSOCIATION OF CERTAIN FORMS OF MYOPIA WITH DISEASE OF THE NOSE AND PHARYNX.

Dr. Rayner Batten, England. (Report of the meeting of the Ophthalmological Society of the United Kingdom, July 4, 1895, *The Lancet*, July 13, 1895.) After referring to a former paper read before the society in July, 1893, in which he held that certain constitutional diseases produced myopias, distinguishable and differing from each other according to their cause, he proceeded to describe a special form of myopic fundus which he associated with certain diseases of the nose and pharynx. The chief characteristics of this form of myopia were: (1) The existence of localized posterior staphylomata at or in the immediate neighborhood of the optic disc or on the nasal side of the fundus; (2) the tilting of the optic disc in the direction of the staphyloma; and

(3) the edematous condition of the more prominent margin of the optic disc. This edema or "pseudo-neuritis," he considered as secondary to and caused by the tilting of the disc. The conditions of the nose and throat with which he associated this form of the fundus were adenoid vegetations, enlarged tonsils, deviation of the septum, blows on the nose and forehead, ozena, syphilitic disease of the nasal bones and chronic otorrhea. He quoted cases in which myopia had immediately followed the onset of some of these conditions, and in conclusion said that the presence of the edema was generally a sign that the cause was still in active operation; that the visual acuity was seldom good in these cases, even when the degree of myopia was low, and was especially bad when the staphyloma was on the nasal side of the optic disc; that the whole condition was indicative of a progressive myopia, and that the edema and tilting both tended to disappear with the progress of the myopia.

A CLINICAL STUDY OF ONE HUNDRED AND SIXTY-SEVEN CASES OF GLAUCOMA SIMPLEX.

Wm. Zentmayer, M. D., Philadelphia, and Wm. C. Posey, M. D., Philadelphia (*Archiv. of Ophthal.*, July, 1895). The authors have made an exhaustive study of the clinical histories of 167 cases of glaucoma simplex; the following are among the conclusions arrived at as a result of such study: "Simple glaucoma occurs in either sex with about the same degree of frequency, but manifests a preference for the eyes of males. The majority of cases occur at the beginning of the fifth decade. It is quite uncommon, occurring in about .736% of the cases which seek treatment at ophthalmic hospitals. All forms of ametropia are equally liable to the affection. With the exception of articular rheumatism and influenza, which appear to induce changes that favor its development, there are no other particular systemic diseases which predispose to it. It is a binocular affection, although a period of twenty months usually intervenes between the manifestation of the symptoms in the two eyes. The two most prominent subjective symptoms are failing sight and headache, but neither of these possess characteristics which would serve to differentiate them from those occurring in other forms of ocular disease. This form of glaucoma is slowly progressive, two and a half years being the average length of time required to induce

blindness after the appearance of the initial symptoms. Signs of irritation in the anterior segment of the eyeball are usually absent, but 4.52% of the cases exhibit such changes.

"An inflammation of the optic nerve is a constant attendant upon glaucoma, being noted in every eye containing a pathologic excavation. It manifests itself as a low-grade neuritis, affecting the entire structure of the nerve, and seems to render the nervous tissue more liable to the peculiar kind of excavation which is the most constant characteristic of glaucoma. No one of the four findings most commonly observed in glaucoma is essential to the disease, for the disease may occur without an excavation, without the field being contracted, without the diminution of central visual acuity, or without rise of tension. The excavation, however, is the most constant symptom, occurring in 81.43% of all the eyes that were examined. Although the excavation shows a marked predeliction to occupy the temporal half of the disc, no part of the nerve escapes. In exceptional cases the excavation appears at the temporal edge of the disc as a continuation of the physiological excavation. From here it gradually spreads over the head of the nerve, encroaching upon its structure until only a narrow rim of nerve fibers remains at the nasal edge. Central visual acuity may remain normal although the field for form and color be encroached upon (in 10.77% of the cases). The tendency of the scleral ring to become visible all around the disc, and its disposition to broaden, especially to the temporal side, are significant of the degree of the intra-ocular tension to which the globe has been subjected, and go hand in hand with the extent and depth of the excavation. As the broadening of the ring, however, usually appears before the excavation, its presence in eyes possessing other symptoms of glaucoma shouls always excite suspicion of this disease.

"The increase in intra-ocular tension as determined by palpatation is not necessarily a constant factor, being detected in 32.63% of cases. Where the tension is increased the field will be distinctly cut or the nerve excavated. Rigidity of the sclera is often the first indication of increased intra-ocular tension. * * * The shallowing of the anterior chamber exists in eyes where there is no excavation, but the converse is not true, for in every eye in which there is an excavation there will be a shallowing of the anterior chamber. * * * Other signs of increased intra-ocular tension, such as the chorioidal halo and the venous and arterial pulses occurring in such a small proportion of cases show that they are not constant factors of the disease, and their absence cannot be regarded as nega-

tive evidence for the existence of a glaucomatous state. Increased tension limits the action of accommodation in only 34.88% of the cases. In the great majority of the cases the limitation of the field consists in a concentric contraction for color and form to an equal extent. The consideration of the relative amount of contraction in the form and color field, often adopted in the distinction between an atrophic and a glaucomatous excavation, is valueless, as the findings show that in quite a large proportion of cases (13.06%) the color field was relatively more affected than the form. Indeed in sixteen of these thirty-two cases (50%) the form field was normal, whilst that for red was contracted twenty degrees or less. Contrary to the findings of other observers, the most frequent type of restriction of the visual field consists in concentric limitation of the entire field and not in the contraction to the nasal side.

"The effect of the administration of eserin and the performance of iridectomy in checking the course of the disease is proportionately the same in the treatment of simple glaucoma. As operative procedures are always to be deprecated when other measures are equally valuable, eserin should be employed in all cases of the disease. If at the end of a month the extent of the fields has diminished, iridectomy should be resorted to, as there will be nothing further to expect from the action of the drug. If at the end of that time, however, an improvement is noted, as evidenced by a study of the field, the drug should be continued, as there is reason to expect that a beneficial action will be exerted for ten months upon the extent of the fields and fifteen months upon the visual acuity. After iridectomy is performed there is ground to believe that the course of the disease will be checked for a period of eighteen months in 50% of the cases. Eserin is powerless in 20%, iridectomy in 10% of the cases. So that 10% of all cases of simple glaucoma will not be benefited despite all therapeutic measures which may be employed."

SEVERAL CONSIDERATIONS ON THE APPLICATION OF ELECTROLYSIS IN TWELVE CASES OF DETACHMENT OF THE RETINA.

Dr. Terson, Toulouse (*Annales d' Oculistique*, English edition, July, 1895). The writer points out that the treatment of detachment of the retina has remained one of the most obscure points in ocular therapeutics. After calling attention to the objects to be sought in the treatment of this affection and reviewing the different

medical and surgical procedures which have been tried he adds that "none of these operative methods, and none of the medical methods destined to aid surgical action, have enabled one to say that a detachment of the retina, even a recent one, has been cured, or, indeed, effectually arrested in its progress." He recommends electrolysis. "The positive pole should be introduced into the eye as in some cases it is necessary to obtain closure of the puncture wound as rapidly as possible, for fear of causing most dangerous hypotonia. A very small wound should therefore be made and, consequently, very fine needles must be employed." He uses a strong needle made of platiniridium; this is mounted on a small metallic shaft, furnished with a groove to receive a handle of gutta percha, which serves as a handle and as an isolator to concentrate the action of the current in the platinum point. He applies a current of 5 milliampéres for exactly one minute; it is important to measure the current with a very sensitive galvanometer. He then gives the histories of twelve cases which had been treated in this manner and sums up the results in these cases as follows:

"Of twelve cases of detachment of the retina operated upon by electrolysis, all very serious, and some truly desperate, I have had one recovery which has lasted for nine months, and can only be attributed to the operation; five improvements which have persisted in an encouraging way after nine, six, three and two months; two negative results, and one aggravation in a case of very old detachment." He draws the following conclusions:

"(1) Positive electrolysis should be applied to recent retinal detachment, and it will have a greater chance of success the sooner it is used after the onset of the accident. (2) This method of intervention interferes in no way with the use of the medical methods recommended for lesions of diathesic origin, the value of which has been shown by long experience, from the palliative standpoint. (3) Clinical observation and experiments on animals prove that the application of a current of 5 milliampéres of one minute duration is inoffensive to the eye."

PENETRATING WOUNDS OF THE EYEBALL.

Casey A. Wood, M. D., of Chicago (*Medical News*, Aug. 10, 1895). The writer divides ocular traumatism into three classes: "(1) Those that are serious or not, from the standpoint of sight only, in which we are mostly concerned in asking whether or not

the patient is likely to have useful vision in the injured organ; (2) those that threaten the integrity of the second eye, quite apart from the fate of the injured eye, whose vision may at the time be fairly useful; here the eventual vision of the injured eye must be subordinated to the protection of the fellow-organ; (3) those cases, probably the most numerous, in which sight is destroyed in the injured eye, and anxiety may be felt in respect to the vision of the other eye."

He gives the histories of a number of cases to illustrate these varieties, and says, regarding the treatment of each variety: "The eye is never to be enucleated or eviscerated in injuries of the first class; it is to be closely watched in all examples of the second class, and to be removed unless both eyes become and remain quiet. Lastly, injured eyes of the third class should always be removed."

As an aid to prognosis and treatment he suggests the following rules:

"1. As long as the wound heals without difficulty and no sympathetic irritation exists, I would treat with rest and antiseptics, and would not remove an eye whose injury is confined to the cornea, iris and lens.

"2. I would not enucleate an eye containing a foreign body when the injury was confined to these tissues and the foreign body could be removed.

"3. I would not remove an eye containing a foreign body if there were no injury in the ciliary region, and the missile had passed through the posterior wall of the globe.

"4. I would not immediately excise an eye injured by small shot (which are usually aseptic missiles), even if the wound were in the ciliary region, provided the patient could be occasionally seen by an oculist.

"5. I would always excise an eye that contains a foreign body that could not be removed.

"6. I would excise an eye in which the ciliary body had been injured, even if the sight were not much affected thereby. The only exceptions I would make to this rule are small gun-shot wounds, cases in which the second eye is useless or had been removed, and those instances in which there is no continued uveitis of the injured eye, provided always that the patient could be frequently seen by an oculist. For the average man, however, excision or exenteration would be, by far, the safest procedure in

the last instance. When loss of sight goes along with ciliary involvement there can be no argument in favor of retaining the eye.

"7. When once ophthalmia migratoria has set in, it is wise to retain the injured eye, if there be any sight in it, as eventually it may be the better of the two.

"8. It is safe and proper to remove all continually tender or inflamed eyes of adults whose vision has been lost from a penetrating wound in whatever region of the globe.

"9. It is highly desirable to retain the eyeball in patients under 20 years of age, if it can be done with safety to the better eye, as earlier removal of the globe retards the growth and development of the corresponding orbit, and greatly alters and mars the facial expression."

THE OCULAR SYMPTOMS OF LOCOMOTOR ATAXIA.

William E. Bruner, A. M., M. D., of Cleveland, Ohio (*Medical News*, Aug. 3, 1895). The writer calls attention to the importance of the ocular symptoms as aids to diagnosis, especially in the early stages of locomotor ataxia. These symptoms arrange themselves in three groups: those pertaining to the internal muscles, especially the iris; those concerned with the external eye muscles; and the changes in the optic nerve or optic atrophy.

"The affections of the internal muscles reveal themselves chiefly in pupillary changes, and these are numerous. The most important are: (1) Reflex iridoplegia. (2) Absolute iridoplegia. (3) Myosis. (4) Inequality of the pupils.

"The tabetic affections of the external eye muscles may be divided into two groups: those occurring early in the disease and frequently transient, and those belonging to the later stages of the disease and more often permanent, though either may occur at any stage. In regard to the relative frequency of the muscles or nerves affected, the third nerve is the most often paralyzed, the sixth less frequently, and the fourth only exceptionally; but of individual muscles the external rectus is most frequently affected, while ptosis from paralysis of the levator and paralysis of the internal rectus (causing external squint) are next in frequency.

"The relationship between tabes and optic atrophy is intimate. As regards its frequency authorities differ, ophthalmologists, for example, naturally reporting a higher percentage of cases with atrophy than neurologists. At the very least, 10 per cent of the

patients with locomotor ataxia exhibit more or less optic atrophy. * * * Optic atrophy is usually an early, sometimes the initial symptom of tabes."

THE PUPIL IN HEALTH AND IN EPILEPSY.

Wendell Reber, M. D., Pottsville, Pa. (*Medical News*, Aug. 24, 1895). The writer mentions that the matter of inequality of the pupils or anisocoria in its relation to epilepsy has been noticed by several observers. His paper directs attention to the percentage of anisocoria—manifest and latent—occurring in persons of average health, and then considers pupillary inequality, as seen among a number of epileptics at the State Hospital for the Insane at Norristown, Pa., during the time he was an interne at that institution.

"From my studies I incline to the belief that the frequency of manifest pupillary inequality in epilepsy is nearer 20 than 15 per cent, and that when investigators have failed to show that amount their work has been lacking in closeness of observation. I further believe that about one epileptic in four will exhibit some latent pupillary inequality. While I realize that my work is open to the criticism of insufficiency of data, I feel justified in drawing the following tentative conclusions: (1) That pupillary inequality, even of considerable degree, is not always pathologic. (2) That in order to demonstrate latent inequalities, the oculomotor influence must be as nearly as possible set aside. (3) That in health latent inequality is more frequent than the manifest form, in the proportion of four to three. (4) That in epilepsy the latent form of the anomaly is more frequent than the manifest in the proportion of two to one. (5) That it is only of relative importance in epilepsy, and can occupy but a minor position in building up the objective picture of that disorder.

AFFECTIONS OF THE EYE IN CONNECTION WITH GOUT.

Jonathan Hutchinson, LL. D., F. R. S., London (*Archiv. of Surg.*, July, 1895). Hutchinson gives the histories of nineteen cases of affections of the eye in connection with gout, with interesting comments. He summarizes our knowledge on this subject in the following propositions:

"1. There is an arthritic form of iritis of common occurrence which has long been recognized by ophthalmic writers. It occurs

in recurrent attacks, often once a year, is very painful, but subsides completely after a time. Its subjects are usually adult men, who, though not liable to podagra, have suffered from sciatica and the like. Aconite, colchicum, opium and alkalies, and liberal counter-irritation are its remedies.

"2. A somewhat peculiar form of destructive iritis, usually symmetrical is occasionally met with in women who inherit gout tendencies, and have arrived at the climacteric period. It is sometimes almost painless.

"3. In men, the subjects of acquired (and inherited) gout, we sometimes see acute and very painful ulceration of the margin of the cornea of a definitely gouty nature, and curable by treatment suited to that diagnosis. It may occur repeatedly to the same patient. Women are not wholly exempt.

"4. Young persons of both sexes of gouty ancestry are liable to insiduous attacks of ophthalmitis in which the iris and the vitreous are chiefly involved. Although recurring more or less in repeated attacks, the intervals of immunity are not well marked. It is a very dangerous affection and may greatly damage or even destroy sight.

"5. The affection just described is sometimes associated with a disorganizing arthritis of the terminal joints of the digits.

"6. Young persons of both sexes, but especially young women, are liable to recurring attacks of inflammation of the ciliary region. These attacks continue to recur with prolonged intervals through many years, and although not at first very dangerous to sight, may ultimately disorganize first one eye and then the other. There is usually a history of gout, and almost invariably a marked liability to chilblain. Sometimes there is also a taint of scrofula. The characteristic results of this form of disease are marginal opacities in the cornea and thinning of the ciliary region of the sclerotic.

"7. A very curious condition is sometimes presented by those who inherit gout, which consists in the formation of dusky swellings on the sclerotic at some distance from the cornea. These swellings persist for weeks or months, and when they disappear, leave a sort of subconjunctival scar or pit, where chorioidal pigment shows through. This disease is, I believe, generally recognized under the name of 'episcleritis.'

"8. Under the name of 'sclerotitis' we recognize certain cases almost always associated with arthritis, and often with gonorrhoeal rheumatism, in which the whole eyeball, as regards its subconjunctival tissue and sclerotic is congested. There is much irrita-

bility and pain. Occasionally the iris is implicated, but the attacks are not, as a rule, attended with danger to the organ.

"9. The term 'hot eye' is applied to certain cases of temporary congestion of the eye often very transitory to which the gouty are liable. They often occur in direct connection with articles of diet.

"10. As might be expected, from the varied character of the possible causes, and their mixed association, there are yet other forms of iritis and sclerotitis more or less closely associated with gouty tendencies which do not come precisely into any of the above groups."

HOW JAVAL'S KERATOMETER MAY BE EASILY CHANGED INTO A GOOD CHROMATOMETER FOR THE EXAMINATION OF PATIENTS AS TO COLOR-BLINDNESS.

Carl Weiland, M. D., Philadelphia (*Archiv. Ophthal.*, July, 1895). Admitting that the most convenient and practical tests for color-blindness are those that make use of colored worsteds, the writer points out the disadvantage that worsteds are apt to change in color from handling, light, dust and other circumstances. He then describes a number of instruments in which colors are produced by allowing polarized light to pass through a quartz plate and again through a Nicol's prism. All these instruments are very expensive.

"It occurred to the writer to make use of Javal's keratometer, as this instrument contains already a very fine double refracting prism, and gives a considerable magnification. He got up a little contrivance of his own two years ago, which has worked so well since that he thought himself justified in making it known to the profession, and in thus increasing the usefulness of the Javal instrument. His method differs from that of the authors mentioned though the principle is the same. This color attachment to Javal's keratometer consists of a straight metal tube, about one and one-half inches in diameter, that reaches from the place where the patient's cornea usually is to about the beginning of the barrel of the telescope, and is so fastened to the head-rest that its axis coincides with the axis of the instrument. At the front part of this color tube there is a plane glass plate behind which a Nicol's prism is fastened in a cork. From this prism the polarized light passes by a round diaphragm through a quartz plate cut at right angles to its axis and about 5 *mm.* thick.

"This is essentially the whole outfit; for in looking with the Javal through this tube one will see two large fine color fields partially overlapping each other. These color fields are of complimentary hues while the place of overlapping shows white, provided, of course, that white light, as reflected from a white surface like a piece of white paper, is employed in this experiment. If now the arc of the Javal be rotated, while the color tube remains in the same positions, the colors will change continually, but always remain complementary, returning, however, to their original hues after the arc has been rotated through ninety degrees.

"I would recommend the instrument to be used in the following way: Place your patient's eye at the ocular of the instrument after you have first looked in yourself and given to the color tube such a position that blue and yellow appear, because thus most color-blind people will recognize two different colors. Now ask your patient whether the two colors are exactly alike or at least shades of the same color. If he answers no, turn the barrel of your Javal slowly through ninety degrees, telling your patient to stop you as soon as the two colors are alike. If he has good color sense he will always see two different colors, but if he is color-blind he will find that in a certain position of the arc the two colors appear alike or at least as much alike as if they were shades of the same color. These colors will usually be green and rose for a green-blind person, while the red-blind person generally selects a more bluish green and a rose with much more red in it.

This suffices to prove that your case is color-blind. But if you want to go further, if you wish that the two colors shall appear exactly alike even in brightness (which can never be attained with the worsteds), then take a second Nicol's prism and fasten it so in front of the eye piece that it can be rotated and is as near as possible to it. If now your color-blind patient looks again, leaving your arc of Javal as before where the colors appeared almost the same, you will, on rotating your new Nicol, easily find a position where the two colors look exactly alike in hue as well as in brightness. Now put down in your case book the position of your color tube, that of the arc of Javal and that of the second Nicol, and you will always be able to reproduce the same color equation, even after years, when the wools would long have faded. The whole procedure for both eyes need not take more than a few minutes and is therefore quite convenient.

"One might argue that this test would not always work well, because it depended altogether upon the faithfulness of the examinee, and a color-blind person might simply refuse an equation between two complimentary colors. This objection has been raised even by Mauthner in the new edition of his *Farberlehre*, 1894, page 127. But it will not be difficult to catch such an individual by putting, without his knowledge, a piece of red glass in front of the color tube so that only red rays will enter the instrument. Under such conditions the two discs must appear alike to him in a certain position of the arc, so that he will be induced more easily to admit the equality of the color fields when the red glass is taken away and replaced by common plain glass. But should he refuse to see two equal colors, even with the red glass, then he would betray his attempt to deceive and be caught by his very denial.

"In the construction of this color tube a quartz plate of 5 *mm.* thickness was used, but it will be well to arrange the tube so that one or two 5 *mm.* plates more might be dropped in, because then the colors are much less brilliant and saturated and therefore, on account of their whiteness, better enabled to catch even the slightest cases of color-blindness. But in the writer's own experience, the 5 *mm.* plate has been always sufficient.

"The advantages of such a method for those who possess a Javal, and therefore have to spend only a few dollars for the color tube, are the following: (1) The colors will never fade or change in any other way as long as white light is used for the test. (2) One need not cover one eye, as only one eye can see at a time. (3) The color fields are large, and it requires no accommodative effort to view them. (4) It is possible to make the two different colors appear exactly alike, while in the worsteds one must be content with an approximation."

ABSTRACTS FROM FOREIGN CURRENT OPHTHALMOLOGICAL LITERATURE.

By Casey A. Wood, M. D.,
of Chicago.

MASSAGE OF THE EYE—PANOPHTHALMITIS PRODUCED BY OLD LEUCOMATA ADHERENTIA—ANTERIOR SYNECHIÆ AND THEIR TREATMENT BY SYNECHOTOMY—FIBRO-SARCOMA OF THE ORBIT—THE PNEUMOCOCCUS IN OCULAR PATHOLOGY—WHAT IS THE BEST TREATMENT OF OLD HERNIÆ OF THE IRIS—THE OCULAR COMPLICATIONS OF DIABETES—OPERATIONS FOR SECONDARY CATARACT—SOME THEORIES RELATIVE TO THE CAUSATION OF GLAUCOMA.

The annual session of the Société Française d'Ophtalmologie was held in Paris, May 6th to 9th. I have translated some of the papers[1] presented at that meeting, together with as much of the discussion as was practical and interesting.

MASSAGE OF THE EYE.

The writer[2] thinks that massage vigorously applied may be a dangerous proceeding when lesions of the globe are present, but in most processes affecting the lids it is extremely valuable. It has the double advantage of being the most effective method of applying to the lids and bulbar coverings medications that can be used in the form of ointment or powders, and of emptying the congested vessels supplied to the ocular tissues. Above all is it indicated in phlyctenular conjunctivitis and keratitis, and in corneal opacities, while gentler applications are of value even in episcleritis, iritis and irido-choroiditis.

Simple massage, *i. e.*, without medication, and by means of the fingers only, or with the aid of some especially constructed instrument, can often be applied with advantage in muscular affections of peripheral origin as well as in vascular irregularities. On the other hand, it is valueless in progressive myopia and in opacities of the crystalline.

Grandclément recommends its employment in cases of interstitial keratitis, and thinks that it decidedly cuts short the course of the disease.

[1] From the June and July numbers of the *Revue générale d'ophtalmologie.*
[2] *Le massage de l'oeil*, M. Parenteau, (of Paris).

PANOPHTHALMITIS PRODUCED BY OLD LEUCOMATA ADHERENTIA.[3]

It is well known that a destructive inflammatory process may affect all the tissues of an eye having an adherent leucoma—the result of corneal perforation, operative or other. More than that the panophthalmitis may set in years after the occurrence of the iridic hernia, without warning and without any special evidence of infection.

Terson gives a brief history of four illustrative cases. The first, probably unique, was that of a male patient with trachoma and a double leucoma adherens of several years standing. Inside of a month a most violent and apparently spontaneous phlegmonous inflammation attacked both eyes, necessitating their excision. The three others had a similar experience confined to a single eye; in two of these enucleation was resorted to, while in the other, an exenteration was done.

The pathology of such a condition of things is well-known, its bacteriology having been thoroughly studied. Pyogenic microbes (usually of conjunctival origin) invade the iris by way of the original perforation, infect the ciliary body and corpus vitreum, and bring about a total loss of the eye through suppuration of its contents. There is probably always an early stage of inflammatory infection, or rather of inflective inflammation, when treatment may be of avail, and it is effective when the actual cautery is applied to the point of infection and injections of sublimate are given. When, however, the vitreous and ciliary body are plainly involved an enucleation should be practiced. If the cornea has already been perforated we may content ourselves with removing an anterior segment. In neither case is it advisable to put in sutures.

As prophylactic measures synechotomy (combined or not with one or more iridectomies, or even iridodialysis) may be practiced.

ANTERIOR SYNECHIÆ AND THEIR TREATMENT BY SYNECHOTOMY.

As a sort of complement to the preceding paper the author[4] advises division of the attachment between iris and cornea where

[3] *Panophthalmies consécutives á d'anciens leucomes adherents*, Terson, (Paris), p. 284.

[4] *Synéchies anterieures et synéchotomie*, Par. M. Gaupillat, (Troyes).

it is at all practical. When this is deftly done, not only is the eye a safer eye, but for cosmetic reasons it is a much more desirable organ since in the majority of cases (after tatooing) few persons would know that an anterior synechia had existed. It is to be regretted that this very satisfactory operation, which Desmarres practiced and recommended, should have fallen into desuetude. [My readers will find two short but instructive articles on this valuable procedure written by perhaps its best-known advocate in England, Mr. William Lang, in volume XII and volume XIII, pt. 1 of the Ophthalmic Hospital Reports. The twin knives pictured in the first article can be made by any of our instrument makers. Messrs. Weiss & Son, 211 Oxford street, London, W. C., made those used by Mr. Lang. C. A. W.]

FIBRO-SARCOMA OF THE ORBIT.

The writer[5] has lately had under his care a girl, 16 years of age, who for two years and a half suffered from an orbital tumor that presented several peculiarities of growth. When first seen the disease showed itself on the upper-outer aspect of the bulbar conjunctiva as a yellowish-red patch which extended to the superior fornix. Little by little, this infiltration spread to the orbit, and in two years time it was recognized as a tumor behind the globe, not only adherent to the external orbital wall, but involving the external rectus.

Removal of the orbital contents showed that the external rectus muscles was completely enveloped by an extremely compact covering of fibrous tissue that extended posteriorly to the bony origin of the muscle, and in front to the superior rectus and the lachrymal gland.

Histologically, the body of the mass was formed of round and fusiform cells with vessels and other intercellular tissue, both adult and embryonic. The new growth within the muscles and the lachrymal gland was entirely embryonic.

The results of this inquiry undoubtedly show that the sarcoma originated within the capsule of Ténon. As many sarcomata appear to be due to an infection from without, it is interesting to note that the point of departure in this case was the tissue immediately underlying the conjunctiva which is constantly exposed to various forms of infection.

---

[5] *Fibro-sarcome orbitaire*, Kalt, (Paris), p. 273.

THE PNEUMOCOCCUS IN OCULAR PATHOLOGY.[6]

The author adds another to the long list of discussions regarding the pneumococcus and the several often widely differing pathological conditions of the eye with which it is associated. He believes these microbes act as the morbific agent in certain unimportant forms of conjunctivitis, and stand as the principal cause of grave ulcerations of the cornea. Examinations of the discharges in catarrhal dacryocystitis also proved the frequent presence of this bacterium.

One case of panophthalmitis following leucoma adherens, associated with a lachrymal mucocele, presented an abundance of these cocci both in the pus from the eye and in the discharge from the sac. In another case of panophthalmitis which had set up a sympathetic iridocyclitis, the existence of these bacteria was also demonstrated by innoculating a mouse.

The pneumococcus, which is found normally in the upper air passages, produces ocular diseases, not only by infection from without, *i. e.*, by way of the conjunctiva and cornea, but from internal sources—the orbit and the deep structures of the eye itself. The external parts appear to be affected indirectly from the nasal fossæ by the migration of bacteria through the lachrymal passages.

WHAT IS THE BEST TREATMENT OF HERNIA OF THE IRIS?

The author thus concludes his paper:[7]

"Every hernia of the iris left to itself is a constant menace to vision, either from staphyloma or infection.

"The only effective treatment is surgical, because its reduction spontaneously or by the use of eserin or atropia is exceptional and rare.

"The three operative methods most in vogue are: (1) *Excision*, which has its dangers and inconveniences; (2) *cauterization*, which is painful and often unsuccessful, and (3) *incision*, which, when properly carried out, gives results which are both certain and rapid. To gain these the small tumor should be thoroughly divided from side to side—split through in its longest diameter—and allowed to heal under antiseptic precautions."

---

[6] *Du pneumocoque en pathologie oculaire*, par M. Cuenod (Paris), p. 294.

[7] Sur le meilleur mode de traitement des hernies de l'iris. Grandclément (de Lyon).

THE OCULAR COMPLICATIONS OF DIABETES.

Koenig[8] thinks these are very numerous, the most frequent being weakness (sometimes amounting to *paresis*) of accommodation and cataract. Of 500 cases examined by him at Vichy, fifty-six, or 11%, had ocular affections, ten of which showed crystalline opacities. There were in addition twenty cases of accommodative weakness, two examples of gangrene of the lids, two of hemorrhagic glaucoma (one followed by death) and two of chronic polio-encephalitis superior, one of which resulted in death after two months. Diabetic cataract, as was long ago pointed out, Koenig describes as being soft in young subjects and hard in old people, and must be dealt with accordingly. Among the post-operative accidents of extraction are edema of the lids and peri-orbital neuralgiæ.

Glycosuric retinitis is characterized by small apoplexies interspersed with whitish exudations. When, however, the latter predominate and when they are grouped about the fovea the presence of albumin in the urine is also to be suspected. The differential diagnosis between these two forms of retinitis from the fundus changes alone is often difficult or impossible. When the optic nerve becomes affected the papillary discoloration that results is that of a simple white atrophy without edema.

Two cases presented some interesting points: the first patient, 54 years of age, had a brother blind from optic atrophy; the urine of the second, 6 years of age, contained 57 *grams*, 72 *ctgr.* of sugar per liter.

OPERATIONS FOR SECONDARY CATARACT.

The author[9] refers to the suspicion with which many operators regard discission or removal of cataractous remains, whether they be thickened capsule, consolidated soft matter, iritic exudations or a combination of two or more of these. Various accidents may follow an ordinary needling, and it matters not if a single needle be used or Bowman's double operation be resorted to. Dragging out the lenticular remains by means of the capsule forceps or hook is still more dangerous, and it has happened to even the most careful surgeon that an eye has gone to destruction from, or has been badly damaged by, an iritis, an irido-cyclitis or an irido-glaucoma, following what is commonly regarded as an innocent

[8] Koenig. Sur les complications oculaires du diabètes.

[9] Hermann Esberg. Zur Operation des Nachstaars, *Klin. Monatsblaetter für Augenheilkunde*, August, 1895, p. 249.

procedure. Hence Esberg's preference for the capsule scissors, and he has used them for all degrees and kinds of secondary cataract without the slightest untoward result. The opening for the admission of the scissors should be made at the scleral border and must be large enough to admit of free movement of the instrument within the anterior chamber. When the pupil can be sufficiently enlarged the cut is to be confined to the pupillary area, but, if need be, a portion of the sphincter iridis is included between the blades of the scissors. It is rarely necessary, except in old cases where there are broad and parchment-like adhesions between the cataractous debris and the iris, to make a second cut with the scissors at right angles to the first. The writer earnestly recommends this method as safer, more certain and in every respect more satisfactory than any other plan hitherto devised for dealing with such cases.

SOME THEORIES RELATIVE TO THE CAUSATION OF GLAUCOMA.

Koster[10] furnishes us with an interesting report, occupying eighty pages of *Graefe's Archiv.*, of experiments made upon rabbits that adduces some evidence upon the negative side of certain questions regarding the nature of glaucoma. These experiments consisted chiefly in occluding two, three and all of the *venae vorticosæ*. By varying the amount of interference with the venous circulation he was able to determine at one time a temporary and at another period a permanent closure of these vessels, and to study the minute changes that resulted in the retina, ciliary body and other structures of the eye. Although the lesions so produced partly resembled those present in certain forms of glaucoma (as, for instance, the union of the iris periphery to the sclera), the author was unable to find a single instance where the whole picture recalled a typical case of glaucoma as we know it in the human subject. And this was equally true of those animals whose vortex veins had been ligated in pairs or three at a time, or where they had all been occluded. He does not think, therefore, that theories about glaucoma which postulate a congestive stasis in the region of the venae vorticosæ as the primary origin of the disease are in any sense tenable. At any rate no such sanction for these or allied hypotheses is to be found in the eyes of the lower animals.

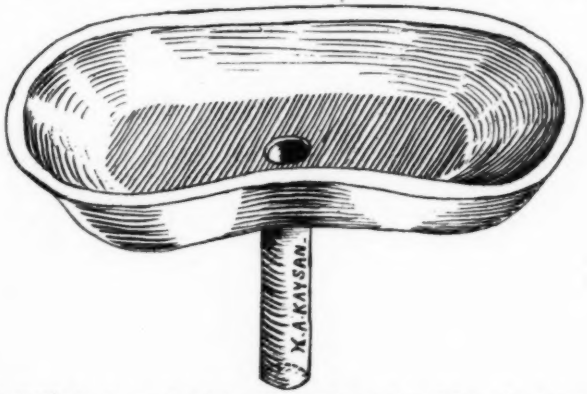
[10] W. Koster. Beiträge zur Lehre von Glaukom. Experimentelle Untersuchung aus dem Laboratorium von Prof. Leber zu Heidelberg. *Graefe's Archiv. für Ophthal.*, Bd. 41, Abth. II.

AN OTOLOGICAL CONVENIENCE.

By Henry A. Alderton, M. D.,
of Brooklyn.

ANY aid to convenience or cleanliness in the treatment of the ear is of more or less importance, therefore no excuse is needed for presenting to otologists the pus basin depicted below.

In syringing the ear or dressing the wound of a mastoid operation the ordinary pus basin has many objections. The patient is obliged to hold it in such a manner that his fingers are more or less soiled by the contents of the basin, and in holding the basin he finds



great difficulty in maintaining its horizontal position; he frequently spills fluids in one or another direction. With the variously devised glasses, as also with the pus basin, frequent removals are necessary in order to empty the vessels when full.

In the following device, consisting of an ordinary hard rubber, papier-maché or metallic pus basin of any of the common shapes, a metallic tube five inches long by one inch in diameter is cemented or riveted perpendicularly to the middle of the bottom of the basin,

after cutting out a button one inch in diameter at the point of application. In use a soft rubber tube one inch in diameter is drawn over the free extremity of the tube in such manner as to form a continuation of it; this rubber tube may pass through a screw-eye let into the edge of the operating table and so down into any large receptacle upon the floor of the office. This screw-eye also serves as a rest to hold the basin when not in use, the metallic tube being drawn through it.

The patient holds the basin by the metallic tube, which makes a convenient handle; the basin is placed in position and all fluids, during syringing or dressing, pass uninterruptedly down the tubes into the receptacle under the operating table, whilst the gauze and other solid dressings remain in the basin and gradually drain, so that they may be removed comparatively dry to another vessel in which they may be taken to be burnt or otherwise disposed of. Also the patient, if susceptible, is not offended by the sight of the offensive discharges and dressings.

The above apparatus is to be had of Mr. H. A. Kaysan, surgical instrument maker, No. 34 Bond street, Brooklyn, N. Y.

138 Clinton street.

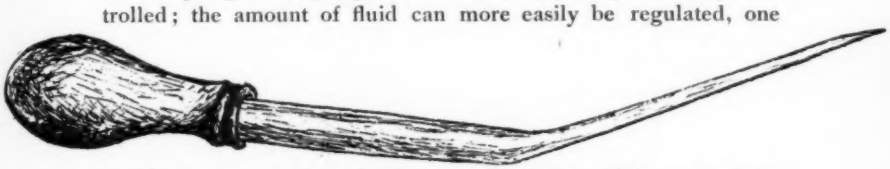
A NEW MIDDLE EAR SYRINGE.

By W. H. Bates, M. D.,
OF NEW YORK.

ASSISTANT SURGEON NEW YORK EYE AND EAR INFIRMARY.

THE syringe has been in use for more than two years and is very satisfactory. It is made like an ordinary eye dropper, by heating the glass tube in an alcohol flame and drawing it out into a tube about two inches long and about one-eighth to one-sixteenth of an inch thick. The end of the syringe is drawn out very small, as shown in the accompanying illustration. At the junction of the smaller portion of the tube with the larger it is bent at an angle of about 30° to permit a better view of the drum membrane and tip of the syringe while making an injection.

The syringe is very light and can consequently be easily controlled; the amount of fluid can more easily be regulated, one



avoids pressure against the inner wall of the middle ear, and the syringe causes less traumatism to the ear. The syringe being made of glass enables one to tell when the fluid is passing out of the syringe, an important point, because sometimes the end of the syringe is closed by pressure against some part of the ear and no fluid enters the middle ear. The quantity of fluid injected is also found at once by observing the height of the column of fluid in the tube before an injection and during the progress of an injection. The rubber bulb has advantages over the piston syringe, being simpler it is less apt to get out of order, easier manipulation, requiring but one hand; ability to throw a stream with force; water can be thrown more than ten feet by exerting a quick strong pressure on the rubber bulb, or the fluid can be injected very gradually, drop by drop.

The syringe being simple in its construction and made of glass, it is readily cleaned. The syringe does not break while in use in the middle ear. Finally the syringe commends itself on account of its cheapness as it can be made in a few minutes by any one.

64 East Fifty-Eighth Street.

A NEW MASTOID RETRACTOR.

By Max Thorner, A. M., M. D.,
of Cincinnati, Ohio.

Professor of Clinical Laryngology and Otology, Cincinnati College of Medicine and Surgery; Laryngologist and Aurist to the Cincinnati Hospital, etc.

SELF-RETAINING retractors to be used in the course of a mastoid operation have been invented by Barth, Zarniko, Allport, Bishop and others. They have the purpose to relieve surgeon and assistants, to a certain extent, during the operation, as it is sometimes extremely tiresome to keep the field of the operation thoroughly clear by having the margins of the wounds well drawn apart. All of these instruments are constructed on the principle of two retracting hooks united at the lower extremities by cross-bars, or by screws by which they are also separated and kept so during

FIG. 1.

the operation. The following simple devise of two separate hooks has been used by me for some time, and has given me great satisfaction.

The instrument consists of a flat S-shaped piece of steel (or German silver) about one and three-fourths inches long and three-fourths of an inch broad (Fig. 1). One of the extremities is shaped into a three or four pronged hook while the other extremity forms a blunt, broad retractor bent in the opposite direction. This instrument is used in the following manner:

When the bone is well denuded and the periosteum pushed aside, the prongs of one retractor are well hooked below the periosteum of the posterior margin of the wound, and the prongs of the

other retractor below the parts of the anterior margin (*i*, *e.*, the detached auricle). Then a long strip of sterilized gauze about an inch and a half broad, and preferably doubled to render it stronger, is folded in its middle of the blunt end of the anterior hook, drawn across the forehead and around the head of the patient and fastened tightly over the blunt hook of the posterior retractor. (Fig. 2.)

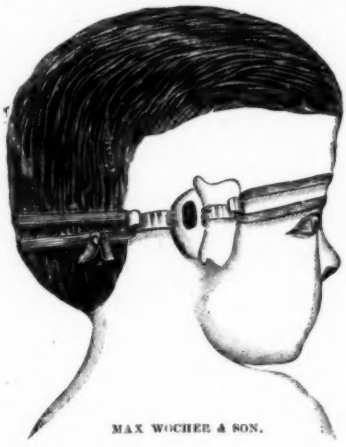


FIG. 2.

In this manner the parts are not only held firmly separated, but the traction exercised upon the hooks by the strip of gauze or a rubber ring (if the surgeon should prefer one) acts to a certain degree in a hemostatic manner. If the relative position of the hooks should require it, the strip of gauze can be drawn anywhere across the face, especially across the upper lip just below the nose. If it should happen that the gauze strip should get loose during

FIG. 3.

the operation it can be readily tightened by being hooked upon one finger of the assistant or by placing anything, for instance a roller bandage between the gauze strip and the forehead.

There are cases, however, in which the amount of tissue which is to be held back by the anterior retractor is so enormous, comprising the auricle, and more or less infiltrated tissues deep down

into the auditory canal, that the usual hook (Fig. 1) cannot sufficiently lift it out of the way. For such cases, and their number is not small, I have had constructed, at the suggestion of Professor S. C. Ayres, a special anterior hook in which the pronged end descends in a longer curve, about three-fourths to one inch from the flat shaft (Fig. 3). With this hook which is somewhat (about one-fourth to three-fourths of an inch) broader, having four instead of three prongs, we can safely hold back the auricle with any amount of tissue.

Little changes in the application of the hooks will, of course, occasionally suggest themselves to the surgeon. The advantages of this method are obvious. The margins of the wound are kept immovably separated. The hooks can be removed and replaced, and their relative position changed in an instant. One, sometimes two hands of an assistant are positively spared, and one may do with one assistant less. Neither the hands of an assistant nor cross-bars of the instruments are in the way of operation. The hooks are readily rendered aseptic, and the gauze is, of course, sterilized before the operation. Those who prefer a blunt retractor to a sharp one may simply reverse the instrument. The slender S-shaped curve renders it easily adapted to the irregular surfaces with which we have to deal. These hooks may and have been used advantageously in general surgical operations upon the head, neck and extremities.

A CICATRIX OF THE MEMBRANA TYMPANI, VIBRATING SYNCHRONOUSLY WITH THE RESPIRATION AND THE PULSE.

By Henry A. Alderton, M. D.,
of Brooklyn.

CHAS. DORR, 64 years of age, occupation wheelwright, born in Germany; No. 27,998, Brooklyn Eye and Ear Hospital, came under observation November 18, 1891, suffering from an affliction of the receptive tract. Complained of deafness in both ears for three years, with tinnitus.

The left membrana tympani showed a cicatrix anteriorly and inferiorly, the remainder of the membrane being thickened and retracted. The cicatrix was movable upon swallowing and valsalvation. H. D. watch zero, whisper 3 inches, speech 3 feet, + Rinné, — Schwabach.

The right membrana tympani exhibited a cicatrix anteriorly and inferiorly, otherwise being thickened and retracted. There was no active or passive inflammation of the tympanum and only the ordinary line of injection along the posterior margin of the manubrium. H. D. watch zero, whisper 2 inches, speech 3 feet, + Rinné, — Schwabach.

In the right ear after the act of swallowing the cicatrix vibrated synchronously with the movements of respiration. Shortly the air became exhausted and the membrane rested against the promontory, upon which change in position the cicatrix vibrated synchronously with the pulse. This series of events was repeated so often as the patient swallowed.

The patient continued to exhibit this peculiarity in the right ear while under observation, a period of four months, during which time there were never any inflammatory symptoms in the middle ear.

As the cicatrix was situated so far anteriorly and inferiorly, it was not possible that the pulsation could be communicated through any dehiscence in the bony wall between the bulb of the jugular and the tympanum, and therefore one must conclude that the dehiscence existed anteriorly at that point in the tympanic cavity, where the carotid canal approaches nearest in proximity to it. In other words the bony partition normally existing between the canal for the internal carotid artery and the tympanum was deficient in this case, and so the pulsations of the artery were communicated in certain positions of the cicatrix to it. Hildebrand, Ludewig, Randall and Hartmann have all noted the occurrence of these dehiscences in the tympanic cavity, but so far as the author knows this is the first case in which they have been recognized as communicating motion to a cicatrix perceptible in life.

Under treatment with pilocarpin no improvement occurred, the drug finally disagreeing. After a four months' exhibition of the iodids, whisper heard in A. D. 20 inches and in the A. S. $3^1/_2$ feet.

138 Clinton street.

DR. PASSOW'S METHOD OF TRANSPLANTATION FOR THE RADICAL (MASTOID) OPERATION IN CHRONIC SUPPURATIONS OF THE MIDDLE EAR.*

By Max Thorner, M. D.,
of cincinnati.

A GREAT many otologists, especially in Germany, do not allow the wound behind the ear to close after having made a so-called radical mastoid operation; but try to secure a permanent opening. In order to do this, as well as to bring as much epidermis into the large wound cavity for the purpose of covering as much as possible of the raw bone surface and to thus shorten the time of after-treatment, a number of methods of transplantation have been devised. The last, described in this monograph, differs in several respects from others, and the salient points of it are the following: The incision through the skin lies further back, about 2 *cm.*, from the insertion of the auricle. At the end of the operation the auditory canal is incised at the junction of posterior and lower wall, the incision being parallel to the longitudinal axis of the canal, and being carried up to the cartilage of the auricle, and then upwards at right angles until it reaches the upper wall of the auditory canal. This upper larger flap of the cutaneous portion of the auditory canal is turned upward, and attached to the auricle by a few sutures; it serves thus to cover a portion of the upper part of the wound. The lower remaining portion of the auditory canal is sutured directly to the anterior margin of the primary incision. Then the lower portion of the wound is covered in the following manner: The primary incision through the skin is carried downward and forward at an obtuse angle about one-half inch, and then an incision is added, which is parallel to the auricle. This flap is turned upward and sewed into the wound, covering very well the lower portion of the wound. This operation has been carried out successfully at Prof. Trautmann's clinic by Dr. Passow, and is not only feasible, but will give excellent results as a goodly number of cases, seen by the writer, have clearly

* *Berlin, Hirschwald*, 1895.

demonstrated. The details of such an operation, of course, cannot be explained in a review, but require a thorough study of the original, where they are well elucidated by a number of excellent engravings.

THE IMPORTANCE OF CORYZA IN CHILDREN.

Dr. E. Fink (*Halle a. S. Karl Marhold*, 1895). This monograph of thirty-six pages is the second of a series of essays on diseases of the nose, ear and throat, edited by that indefatigable worker, Maximilian Bresgen. Twelve monographs will make one volume, and the prospectus promises to furnish a goodly number of papers by well-known laryngologists and otologists. The essay under consideration is one of unusual interest. The learned author has collected the whole literature referring to acute and chronic coryza in children, and has no difficulty to convince the reader of the importance of this generally neglected part of pathology. Without going to extremes, he distinctly points out the consideration the acute and chronic forms of rhinitis deserve in children on account of the many consequences which neglected cases entail for the patient. From this standpoint this essay should interest not only the specialist but even more so the general physician and the pediater. After having given a clear account of the immediate and remote effects of impeded nasal respiration, upon the shape of the hard palate, the upper jaw, the thorax, etc., the connection with adenoid vegetations, with laryngitis, bronchitis, etc., he goes into detail to show how the different organs, and how the whole body is more or less exposed to dangers which were almost unknown fifteen years ago. These points are, of course, well enough known, yet the author understands to speak very convincingly and interestingly about them. However, there is a point, which is rather novel and interesting, *i. e.*, his view regarding the connection of so-called scrofulosis and chronic rhinitis in children. Generally it is assumed that the chronic rhinitis, the broad, swollen nose, the eczema of the vestibule of the nose, etc., are some of the complications of what we are wont to term scrofulosis. The author takes the stand that a chronic rhinitis in childhood is the cause of many affections in neighboring organs, in lymphatic glands and mucous membranes, which go far to constitute the complex of symptoms, generally known as scrofulous, or even tuberculous. There are a great many other views, which will render the reading of this little pamphlet of more than passing interest.

M. T.

ECZEMA OF THE EARS.*

By J. Abbott Cantrell, M. D.,

PROFESSOR OF DISEASES OF THE SKIN IN THE PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE; DERMATOLOGIST TO THE PHILADELPHIA HOSPITAL, AND TO THE SOUTHERN DISPENSARY, PHILADELPHIA.

GENTLEMEN—In following me this morning I wish to impress upon your minds, and especially upon your healthy ears, the utter despair into which one may be thrown by having these organs affected by any disease which is at all likely to cause deafness, either as a temporary condition or as a permanent loss of hearing. The first question for us will be the study of the varieties of eczema, which we may at any time encounter upon the ears or affecting its contiguous parts, especially where it joins the head, either at its superior, inferior or posterior borders.

The varieties with which we may be confronted are either the erythematous, vesicular, or pustular, and whether it is one or the other it is alike, very distressing to the one afflicted. Upon the external ear proper, the lesions usually met with are the vesicular or pustular, and in both conditions the lesions are very often found to be almost innumerable. Upon the affection attacking both the ear and contiguous parts, it is more likely to be the erythematous variety in these situations. Above and around the ear there is likely to be much inflammation, and possibly slight infiltration at the beginning of the condition, but after it is allowed to progress for some time, this is usually found to have increased almost to alarming proportions—so much so that the ear or ears are seen to be swollen to enormous extent, and to stand out from the head as if to get away from the diseased area. The disease attacking this portion of the ear is not always followed by the disease extending to the inner portions as the meatus, but this does occasionally occur. This disease attacking the external ear may often be

*A clinical lecture at the Philadelphia Polyclinic Hospital.

influenced by certain conditions, such as a person wearing spectacles, and the auricular limb of the frame cutting the parts and keeping up a condition which has already begun, or possibly assisting somewhat in the production of the disease in those who are predisposed to it through family influence, or through some inherent tendency of the individual affected. In those who are not particularly cleanly in their habits, or in those who may irritate the parts by too frequent ablutions. Certain affection which are the result of the high winds of winter, that is, whatever may assist in the production of frost-bite; certain diseases of the scalp which may be caused possibly by uncleanliness, or by contact with some one who is themselves of a dirty habit; I refer to one of the animal parasites, the pediculus, this little animal traversing through the hair, causing an intense desire on the part of the afflicted to get relief by means of their finger nails, and thus possibly causing the extension of disease to the ears themselves. Unkempt hair is likely also to produce this condition, especially when it is allowed to collect in folds around the ears and thus irritate it by their coarseness, and the carrying of disordered secretions from the sebaceous glands. When this disease attacks the auditory canal it is usually secondary to that affecting the external pinnacle, or it may be produced as the primary affection on account of persons having the bad habit of continually picking at their ears, either with the point of the finger nail, which is often allowed to grow to enormous lengths for this purpose, or some pointed instrument as the end of a lead pencil or a quill which has been sharpened to a point. Being produced in whatever manner it may, the disease is a very annoying one to those who may be unfortunate to be the afflicted. In this region the accumulation of cerum, mixed with the inflammatory products such as the fine, branny flakes in one instance, or the larger scale in the other with the consequent infiltration, there is likely to be some deafness which, although only temporary as a rule, may become more serious if the disease is allowed to go unattended. If these abnormal collections are not removed at a very early date they are likely to assist in the production of small abscesses which themselves, after once being formed, may keep on forming for some time. Thus it will be seen what this condition may result in if the proper attention is not applied as early as it is possible for one to do such. It is always well to remember and give your friends and patients this advice, that whatever affects the ear or ears should be given immediate attention, because as I have shown you, it is so likely to result disastrously.

In making our diagnosis we are to remember that other diseases are also likely to resemble, to some extent at least, the condition under consideration, and as one of these, erysipelas, is often a grave affection we must keep our wits about us, but when we remember that this is a systemic condition in which we have heightened temperature, decided malaise, utter despair of the patient with the hardened feel of the part and its heightened color, warm feeling of the part, and its well-marked and distinct border giving us plainly the extent of the disease, while in connection with this we have an area which is at all times dry. While in eczema we have a portion which is usually moist, with decided itching, some thickening and infiltration, an ill-defined border, that is, one which fades into the surrounding healthy skin. We likewise have to differentiate this condition from dermatitis calorica which also often resembles eczema, but in this latter affection we meet with it only in summer season, or if met at any other time the condition differs because the lesions are likely to be almost furuncular and discharging enormous quantities of pus; it is usually raised in the manner of a cone with edges of heightened color and tipped with a slight crust at all times, while in eczema we are more likely to find a diffuse eruption which is moist, crusted and occasioning decided itching and other annoying and disagreeable feelings.

The first case that I bring before you occurs in a child, 6 years of age. The lesions occupy the lower portion of the lobe of the ear. They are distinctly vesicular, and they number from ten to thirty, but as the general rule is with lesions of this character witnessed in this disease they have run together, and the crust which has formed is found to cover a number of lesions and differ in this respect from those of a pustular character in that the latter lesion has a crust which covers each lesion, and does run together with others in their close proximity. You also notice that the inflammation is of a very high degree, and that the parts around are swollen to almost double the natural size. The child complains of great distress in that of itching and pain occasioned from the unnatural size of the organ which, as you can plainly see, stands out some distance from its normal position. The condition has not extended from the primary seat of the affection because it has been of only a few days' duration, and has not had time to become very extensive as the child has been brought early for treatment. The first thing to do in the case before us is to remove, if possible, at an early date, the inflammation by a starch poultice

or dressings of boric acid in saturated solution with water, or if preferable, we may employ the solution of chlorinated soda of the pharmacopea. After we have, to some extent, relieved this swelling we can then advise some remedy that we expect will procure a cure, as for instance, calomel in ointment form in the proportion of from 10 to 30 grains to the half ounce of the official ointment of rose water; if this should, at any time, seem to have no effect, resorcin may be prescribed in the strength of 15 to 20 grains to the same amount of ointment base, or an application of from 5 to 10 grains of salicylic acid or salol to the same quantity may be given. This child will return in two or three days and the effect of treatment by calomel will be noticed, and if the result is as good as we wish we will continue it. We will also give a laxative in this case and have the intestines evacuated freely every day, and at the same time, the food of the child shall be selected from those which are more bland.

This lady comes with an eruption upon the ears also. She has now been a sufferer with it for about three months, and as the condition would be better one day and then bad the next, she thought possibly that it might run its course and in that manner cure itself; but as it has not taken this turn, but has been more troublesome within the last three weeks she comes for relief. Upon examining the ear you may notice that the eruption covers its entire extent and spreads somewhat upon the parts which are in close proximity. The eruption is of an erythematous character, and is, as a rule, moist, but at times it becomes very dry at which time it is usually covered with a crust. You can see that the ear has swollen to an enormous extent, and from this the woman receives a great amount of pain and itching. The disease also is found affecting the meatus, and as the moisture from the eruption is extensive, and from the inflammatory character of the condition we have an enlarged increase in the amount of cerum formed, and this, with the former discharge, dries and forms into crusts and blocks the passage, and for days at a time she is unable to hear with this ear. Naturally the first remedy must be directed against the high character of the inflammation, and after this has been relieved we may use more curative measures. We are to clean away the collections in the meatus by either a wash of boric acid or the solution of the chlorinated soda applied freely and often. After which we may advise one of the following in ointment form: Salicylic acid (5 to 10 grains to the ounce); calomel (10 to 40 grains to the ounce); salol (10 to 30 to the same quantity); resorcin (about 15

grains) or possibly the ear will demand more astringent remedies, and if so, we may give sublimed sulphur (1 dram to the ounce). calamin in minute quantity, an emulsion of ordinary starch, or a drying powder such as Fuller's earth. This woman will also receive directions as to the manner of eating and keeping her general health in proper order.

In some of these cases it may be advisable to make use of cod-liver oil, or it may be more preferable to give the syrup of the iodid of iron, in others it may be necessary to otherwise treat existing symptoms. It must always be remembered that there are complications arising in all cases, and these must receive proper attention. Always see that patients are placed under the best hygienic influences, both in and out of the house.

TINNITUS AURIUM AND SOME RESULTS OBTAINED BY ITS TREATMENT WITH CONIIN HYDROBROMATE.

By Vincent Gomez, M. D.,
of Brooklyn, N. Y.

ONE of the most troublesome conditions the aurist is called upon to treat, and for which a great many remedies have been proposed, is tinnitis aurium.

Tinnitus is a frequent symptom in many diseases of the external, middle and internal ear. It is usually present in all those conditions where there is undue pressure on the tympanic membrane from cerumen, imperfect entrance of air into the tympanic cavity, due to obstruction of the Eustachian tube or effusion within the tympanum.

It accompanies most inflammatory diseases of the external or middle ear, follows injuries to the tympanic membrane and blows upon the head or ear, and is a prominent symptom in nearly all nervous affections of the auditory apparatus.

So infinite are the degrees and variations of this symptom that there is probably no known sound to which it has not been compared by patients.

The descriptions which patients give of the noises depend to a certain degree upon their fancy, their graphic power of explanation, and not infrequently upon their rank of life and the sounds with which they are most familiar.

Tinnitus aurium is usually, although not always, a subjectively disagreeable symptom.

It may be assumed that the normal ear is filled with continuous sound. The blood flowing through the large arteries and veins in close proximity to it (such as the carotid artery and jugular vein), as well as the blood flowing through the vessels of the internal

ear, would give rise to sound by throwing into vibrations the tissues surrounding them, including also the walls of the vessels themselves. This motion is sufficient to excite the auditory elements by causing vibrations of the intra-labyrinthine fluids, and so produce sound, which, being a normal condition and one to which the ear is accustomed, will remain unnoticed. The arterial system of the body throws the neighboring tissue into vibrations, but this is not recognized unless attention is particularly directed to it, or, in other words, the entire body is filled with movements as a normal condition, and this, therefore attracts no attention. But let this movement be increased—for instance, by violent muscular exertion, increasing the arterial action, or lessening it, as in syncope—and at once the abnormal condition draws our attention to it.

In the same way the ear is filled with continuous sound as a normal condition, and therefore it is not perceived, these sound vibrations escaping out through the middle ear and external canal. This can be readily proved. Let the external auditory canal be obstructed artificially either by the finger or by a cork. At once a tidal tinnitis, so called, is produced; this being caused by the normal sound vibrations being impeded in their outward passage and being thrown back again to impress the nerve elements for a second time. This, being an abnormal condition, is at once recognized.

Tinnitus caused by obstruction of the normal sound vibrations in their outward passage through the middle ear and external canal; tidal tinnitus, so called, from a resemblance to the noise of the ocean. Such obstruction may exist in the middle ear cavity, as thickening of the soft tissues of the middle ear, exudations and adhesions, as found in chronic catarrh, or in the external canal, as impacted cerumen, or a swollen canal, etc.

The effect of such obstruction would be to interrupt the normal sound vibrations and cause them to reverberate and impress for a second time the auditory nerve elements, causing an abnormal and therefore recognized condition. This is the most frequent variety of tinnitus, and for the reason that it is produced by the more ordinary ear diseases.

Tinnitus caused by abnormal sound vibrations produced either by increase or by decrease of intra-labyrinthine pressure. In a normal condition the auditory nerve elements are subjected to a given intra-labyrinthine pressure, now, if this pressure be altered (either by being increased or diminished), an abnormal condition ensues, and is noted as such.

Tinnitus produced by increased intra-labyrinthine pressure may be caused by increase of the intra-labyrinthine fluids (by effusions, hemorrhages, etc., as in so-called Menière's disease), or can be caused by increase in the amount of blood flowing through the arteries and veins of the internal ear. In either case there will result an increase of pressure that is exerted on the auditory nerve elements. Also, another result of such increase of pressure on the arteries of the labyrinth would be to throw them into more active pulsation, and so cause greater movements of the intra-labyrinthine fluids. These abnormal vibrations impinging on the auditory nerve endings would be noticed as such, and give rise to tinnitus of a pulsating character corresponding to the movements of the pulsating vessels. Such a condition is frequently observed in an eyeball afflicted by glaucoma, or can be produced in a normal eye by exerting pressure on the globe. The veins of the retina will be first thrown into movements, and as the pressure increases the arteries will show marked pulsation. Why should not a similar set of conditions in the internal ear give rise to the same results?

Tinnitus produced by a lessened intra-labyrinthine pressure may be caused by loss of intra-labyrinthine fluids or by a lessened blood supply to the internal ear. The latter cause being the most frequent, a familiar example of this would be the tinnitus experienced by a fainting person, a common sensation being a swimming head accompanied with strange whizzing noises in the ear. The tinnitus of anemia is of this class, and frequently of the pulsating variety. In this variety of tinnitus it is supposed that the sound conducting apparatus of the middle and external ear is normal, if any obstruction exists, it would naturally increase the amount of tinnitus.

Tinnitus may be caused by a diseased condition of the auditory nerve, either in the part lying between the internal ear and brain or in the brain center itself, pure subjective tinnitus.

Here we enter upon an obscure field from the fact that so little pathological research has been made in this direction; but, reasoning by analogy, why cannot the auditory nerve be subject to as many diseased conditions as the optic nerve, where the ophthalmoscope has clearly shown the existence of neuritis, atrophy, and many other pathological changes caused, it may be by disease of the retina, or it may exist as an inflammation of the nerve itself exterior of the eyeball, or it may be due to a brain tumor pressing on the optic nerve or optic tracts, gummata, osseous growths, etc.,

have in turn caused optic neuritis; lesions at the optic nerve endings in the brain itself have given rise to well-defined pathological changes in the optic nerve which, by means of the ophthalmoscope, can be demonstrated and recognized. Now, if these changes exist in the optic nerve, why may not the same condition be present in connection with the auditory nerve, although from its anatomical location, they are not capable of demonstration as in the case of the optic nerve?

And, as in the latter, phosphene symptoms are common, due to nerve irritation, so in an irritation of the auditory nerve tinnitus would be developed, but of a subjective character.

Tinnitus may be noticed in cases of inflammation of the middle ear where fluid has collected, and is caused by the bursting of air-bubbles in their passage through this fluid, the air gaining access to the tympanic cavity by way of the Eustachian tube. Tinnitus so produced resembles a bubbling or crackling sound. In some cases where the membrana tympani has lost its elasticity it gives rise to a crackling sound due to the membrane becoming stiff and dry; also there are cases of tinnitus produced by foreign bodies being deposited on the drum membrane such as cerumen, pieces of hair, etc., giving rise to a rustling or rasping noise.

In myringitis subjective noises are seldom absent, varying in accordance with the intensity of the morbid process going on in the tympanic membrane. The stimulation of the auditory nerve, to which they are due, is brought about chiefly in consequence of the great hyperemia of the deeper structures which is associated with inflammation of the membrane. It is in part caused also by the pressure exercised by the inflammatory products upon the membrane, and hence transmitted through the chain of the auditory ossicles. Spasmodic contractions again of the tensor tympani muscle may set up a special tinnitus in acute myringitis, to which Lincke drew attention as being described by patients as resembling the fluttering of butterflies.

In nearly all acute middle ear suppurations we find tinnitus to be quite a prominent symptom; sometimes it takes on a pulsating character, at others a low pitched sound gives rise to much discomfort. In these cases where the tinnitus assumes a low pitched character it is apt to be more constant.

In mastoiditis I have observed a form of tinnitus which was present in 95 per cent of the cases seen in the clinics at the Brooklyn Eye and Ear Hospital. The character of this form of tinnitus resembles the blowing of a bellows, being of low pitch, constant

(?) and blowing. It is the tinnitus that usually accompanies all acute middle ear suppurations intensified by the increased blood pressure and the somewhat long-continued dilatation of the blood vessels.

Subjective auditory sensations in middle ear catarrh are caused by the same morbid changes as bring about the impairment of hearing. It is, therefore, easy to understand how much they may vary during the course of the same affection.

Their rare occurrence in the case of children is very notable. Even with severe exudative inflammations of the middle ear noises in the ear are almost invariably absent with them from the first to last. This may be due to the greater resisting power in children of the structure closing the fenestra ovalis whereby the base of the stapes is not pushed so far inwards, and the intra-labyrinthine pressure consequently less easily increased.

Just as in some cases the hearing becomes better in the midst of a noise, so also there are instances of tinnitus which, usually constant and distressing, are rendered much less marked or even disappears altogether when the patient is surrounded by noises or is subjected to repeated concussions.

Usually in these cases the improvement in the subjective sounds is associated with an improvement of the hearing under the same conditions, (paracusis Willisii) and it is not unlikely that the two conditions have a similar origin and significance.

Patients frequently complain that the tinnitus is more annoying at night, this being due either to the fact that their attention is more readily called to it then when everything is quiet and there is nothing to distract their mind, or being due to the increased congestion of the head caused by the recumbent posture.

Tinnitus, like deafness, is especially marked in advanced life when the natural senile changes occurring in the middle ear interfere with sound conduction and aggravate any catarrhal state that may be present. In women it is apt to become particularly prominent about the time of the menopause.

Auditory hallucinations such as occur now and then in aural catarrh may, in most cases, be regarded as a sort of tinnitus modified for the patient's mind by the peculiar interpretation which his psychical state leads him to give to them. That is, they probably take their origin in most, if not in all cases, from actual sounds generated in or about the ear, sounds which, unimportant in themselves, are altered by the patient's imagination and magnified into matters of great significance. Thus, the noise of the blood pulsat-

ing in the vessels or the crackling of a dry and atrophic drum membrane may, to an imaginative and nervous person, be transmuted into the voices of dead friends or some other supernatural sounds. And as the imagination is apt to be most powerfully impressed at night, when also the tinnitus is usually most pronounced, the supposed voices and other hallucinations are generally heard at this time, while during the day, the patient may not be troubled by them.

After a chronic catarrhal process has existed for a long time in the middle ear, the tinnitus which was at first distressing may become less marked or may disappear completely. When both ears are involved the tinnitus is often more severe upon the side last affected. This is undoubtedly due to the fact that labyrinthine changes upon the side primarily affected have gone on to such a degree that the portion of the labyrinth, which normally responds to sounds similar in character to the tinnitus, from which they formerly suffered, has been completely exhausted, and no longer reacts to stimulation due to increased pressure.

Involvement of the labyrinth, as secondary to chronic catarrh of the middle ear which causes great and often sudden increase in the deafness may produce either increase or decrease in the tinnitus, according as the auditory nerve fibers are simply irritated or are rendered functionally incompetent. Accordingly, the permanent abolition of tinnitus in advanced cases of aural catarrh points strongly to grave involvement of the internal ear.

When these noises are intermittent, and due chiefly to congestion, they are frequently synchronous with cardiac pulsations, but as the disease advances, this pulsating tinnitus diminishes and is replaced by a constant high-pitched musical sound as the lower portion of the receptive tract becomes involved.

In those cases where the tympanic process is confined chiefly to the region of the oval or round windows, the interference with transmission may be so slight as to occasion very little impairment in the hearing, and the subjective noises may constitute the sole symptom.

The writer wishes to call attention to the results obtained in the medicinal treatment of tinnitus in twenty cases.

The medicinal agent being "Coniin Hydrobromate."

Before entering upon the report of these cases it is well to give a brief résumé of the physiological action of this drug.

The full-grown fruit of conium maculatum, Linné (*Nat. Ord. Umbelliferæ*) gathered while green. The plant varies in narcotic

power according to the weather and climate, being most active in hot and dry seasons and in warm countries. The conium of Greece, Italy and Spain is said to be much more energetic than that of the north of Europe. The leaves and fruit are official. The extract of the seeds is about ten times stronger than that of the leaves. All the preparations of conium are very uncertain in strength. But the best preparations are the fluid extract and the alkaloid.

The alkaloid is coniin and to it hemlock owes its action.

It is an oily, limpid liquid having a strong alkaline reaction and a peculiar odor. It may be given in doses of gr. $\frac{1}{60}$ to gr. $\frac{1}{30}$ or in minim doses from m. $\frac{1}{10}$ to m. ii. The chlorhydrat, and especially bromhydrate of coniin, are greatly to be preferred to any of the other (?) preparations of conium. The bromhydrate is freely soluble in water and also in alcohol, having but little taste and but very slight odor, and is not actively toxic.

The preparations of conium possess a considerable degree of acridity, and are, therefore, apt to produce gastric irritation. The active principles readily diffuse into the blood. What changes they induce in the blood are as yet unknown. When taken internally in sufficient doses they produce very profound weakness, associated, it may be with vertigo and disordered vision. The muscular prostration is extreme, the eyelids droop from weakness, the voice is suppressed, the pupils dilated; consciousness is usually preserved to the last, and life finally is extinguished without struggle.

The chief action seems to be upon the motor nerves which it paralyzes; the efferent nerves are also affected, but to a much less extent.

Conium properly exerts no direct influence upon the cerebral centers, but it is a spinal depressant.

No constant and characteristic post-mortem appearances seem to be produced by coniin.

[To be Continued.]

THE EVILS OF WILDE'S INCISION.—A. CHIPAULT AND A. DEMOULIN.*

TRANSLATED BY VINCENT GOMEZ, M. D.
OF BROOKLYN, N. Y.

PROF. DUPLAY, in his recent treatise on surgery, says, in 1862 Wilde proposed that in cases of suppuration within the mastoid cells, to make a deep and long incision down to the periosteum, and that if the symptoms persisted after twenty-four or forty-eight hours, to trephine the mastoid process.

This practice was adopted by the majority of aurists, but we think that it has not any advantages and makes us lose valuable time. If there is really pus within the mastoid cells the external incision does but little good.

In our estimation it only does good in cases of simple periostitis without involvement of the mastoid cells.

Hence Wilde's incision is rarely indicated. In the majority of cases its employment is not reasonable because it does not attack the seat of the trouble, but merely relieves a symptom—"pain."

Unfortunately it is as yet practiced in a great many cases where it should not be employed, because it is not difficult to perform and does not seem dangerous.

The history of the cases in which Wilde's incision was practiced, and which we have examined at Prof. Duplay's clinic, are sufficient proof.

In fact, from a total of seventeen cases we have only noted four times where the incision was cicatrized and visible, in the other thirteen the incision was infected.

Five times the infection was due to sub-periosteal collection and the incision had a tendency to pout, the incision was made nine

**Annales des Maladies de L'Oreille, du larynx du nez du pharynx.*

times, going through non-infected tissues; the infection was undoubtedly due to septic fluids coming through the external canal and gaining entrance to the wound. Seven out of nine of these secondary suppurations were fulminent; one gave rise to an inflammatory edema of considerable extent over the lateral portion of the neck, an edema which yielded to vigorous antiseptic precautions; one a facial paralysis due to the formation of a purulent focus at the level of the stylo-mastoid foramen; another gave rise to a necrosis of the transverse process of the atlas, accidents necessarily of great importance necessitating prompt action and giving rise to aggravation of the primary otitic affection.

We deem it advisable to note these two observations.

CASE I. *Otitis media grippale, Wilde's incision; consecutive purulent discharge with compression of the facial nerve.*

X., 38 years of age, January, 1895, had an otitis media grippale on the right side, which was treated by boric acid syringing through the external canal, in a few hours a tympanic perforation which gave issue to an abundant discharge until the end of January. At this time the discharge diminished abruptly and accompanied with great pain in the mastoid region. An application of a fly-blister was made, followed by a Wilde's incision, which was followed solely by a little bleeding and cicatrized in a short time. The relief from suffering was short, the pain returning.

Antipyrin and sulfanal were employed without success, and a slight elevation of temperature was noted; another incision was necessary, and, like the first, only gave issue to blood and no pus; the mastoid and surrounding parts only presented a slight amount of inflammation. Nevertheless the incision became infected and a purulent focus made its appearance, which extended along the sterno-mastoid. The slightest movement of the neck gave rise to much suffering, a facial paralysis now rapidly came on, with deviation of the mouth, and flatness of the nasal alæ. A paralysis of all the branches that arise and come through the stylo-mastoid. The branches that arise at the petrous portion were not affected; there was no difficulty with deglutation, no deviation of the velum palatii, nor hyperacousis.

After a long incision anterior to the Wilde's, down to the inferior portion of the cervical swelling, the sterno-mastoid muscle was detached, it could be seen that the focus extended to the anterior portion of the process and over the fibrous envelope of the parotid, and went up as high as the level of the stylo-mastoid foramen, where the nerve was bathed with pus. Its cavity was thoroughly

opened and drained with iodoform gauze, and fifteen hours after our interference the facial paralysis was notably diminished. Jointly with this treatment the middle ear, which again suppurates some, is carefully disinfected.

CASE II. *Left otitis media. Wilde's incision. Purulent discharge. Necrosis of the transverse process of the atlas. Resection of this process.*

A. B., a vigorous individual, 40 years of age, commenced to suffer in September, 1894, with the left ear fifteen days after the onset of the trouble, and abundant discharge made its appearance. At the same time he commenced to experience very acute mastoid pain for the relief of which a fly-blister was applied followed by a Wilde's incision.

This incision was rapidly followed by extensive swelling of the mastoid wound which necessitated a second incision which proved insufficient to arrest the progress of the disease. At the time the patient entered the hospital in December, all the supero-lateral portion of the left side of the neck was tender, indurated and inflamed, three fistulous openings were present, one antero-superior, another above the denuded mastoid, another postero-superior and sub-occipital which arises in the median line, and is directed towards the vertebral foramen in a downward direction to the transverse process of the atlas which can be made out under the skin with the finger right under the mastoid apex. These three fistulæ which discharge a considerable amount of pus communicate with each other by large fistulous tracts. The walls of the tympanic cavity have not been denuded at any point. During the month of February a long incision was made which permitted the union of the fistulæ, opening the purulent tracts and prove that the occipent, and the mastoid presented lesions of a very superficial nature, only finding a slight roughness of the bony parts, but the transverse process of the atlas was the seat of a diffuse ostitis which necessitated its resection.

After having curetted the surrounding soft parts the bone forceps were needed to accomplish the necessary resection, and special care was taken not to wound the vertebral peduncles and arches; it is probably unnecessary to say that during these proceedings the greatest care was observed not to wound the vertebral artery. We had the good fortune to complete the operation without any accident, and obtained a satisfactory result.

The result has been so favorable that the discharge at present has nearly ceased, and the fistulæ have entirely healed. The

diverse movements of the neck can at present take place with great ease, and the patient has only a slight impediment of the neck, and has left the hospital.

These two cases where Wilde's incision was performed has served for a point of entrance of infection, and the complications have been very serious.

Facial neuritis in one case, ostitis of the atlas in the other. Our patients, thanks to the timely interferences, have made a good recovery. These facts, like those of less severity reported by us, we deem are sufficient to condemn the superficial mastoid incision; there is no exact point where a local suppuration should be incised, and when such a focus exists it is not the place to make Wilde's incision, but a long incision should be made that opens up the various diverticula of the collection; it is an incision that is made to open any abscess, and not an incision in a precise location that is meritorous of a place in the domain of operative surgery under a particular name.

TRANSLATIONS FROM CURRENT FOREIGN OTOLOGICAL LITERATURE. (ABRIDGED).

By H. A. Alderton, M. D.,
of Brooklyn.

TREATMENT OF CEREBRAL ABSCESS SEQUEL TO OTITIS MEDIA.

L. Picqué (Soc. de chirurgie, séance du 29 dec., 1894). An interesting discussion has taken place in the Soc. de chirurgie, following the report of Picqué. This classes in two categories cerebral symptoms of otitic origin—in the one, the very distinct functional symptoms easily give the diagnosis of cerebral abscess; in the other, the abscess not occupying the motor zone, the symptoms are vague and the differential diagnosis between cerebral abscess, meningo-encephalitis or phlebitis of the lateral sinus, is more delicate. However, a persistant cephalalgia localized at the same point, with coma and slowing of the pulse, certainly indicates cerebral suppuration. Moreover, cerebral abscesses are oftenest accompanied by a diffuse purulent collection which forms a sort of line of communication between the mastoid suppuration and the cerebral suppuration. The course to be followed by the surgeon differs as he finds himself confronted by the one or the other class of symptoms. If there are troubles indicating a lesion of the motor zone, it is necessary to at first trephine the cranium at the level of the suspected convolution, then afterwards to open also the mastoid process. If there are, on the contrary, vague cerebral symptoms, one must be content at first to open the mastoid; and if in about forty-eight hours, the symptoms do not amend, to go resolutely to searching the intra-cranial space, utilizing the passage already opened.

Berger adopts absolutely this method. If by the opening in the cranium a traumatic encephalocele is produced, he applies no particular treatment to it; generally, in a few weeks, the encephalocele is reduced of itself and cicatrizes with the soft parts.

In a general way, the surgeons who took part in the discussion, Routier, Schwartz, Lucas Championniére, are of the opinion that in the presence of cerebral symptoms, supervening in the course of an otorrhea, it is necessary at first to trephine the mastoid process and to wait before pushing the interference further.

ECZEMA OF THE EXTERNAL AUDITORY CANAL.

Hermet (*Jour. de med. de Paris*, No. 4, 1895) considers nitrate of silver as the best agent to employ, as well in eczema as in furunculosis of the auditory canal.

He applied it in the following manner: After having thoroughly cleansed the canal by means of washings with boiled water, he introduced a tampon of cotton soaked in silver nitrate $^1/_{10}$, and left it twenty-four hours in place. The next day the canal was uniformly black, but the atresia had disappeared, the cauterized epidermis had become detached in shreds in about two or three days. The patient was cured for the time being.

For furunculosis the technique is identical, with this difference, that the cauterization should be renewed two days in succession. If the furuncle is recent, resolution occurs; if it is on the point of opening, the nitrate corroding the skin, works like the stroke of a bistoury, the furuncle empties itself, and there is no other subsequent inoculation.

FOREIGN BODY IN THE EXTERNAL AUDITORY CANAL.

D'Aguanno (*Gaz. degli ospit.*, 2 *fev.*, 1895) shows that the swelling of the auditory canal, in consequence of the irritation produced by the foreign body, and the attempts at extraction, is in general the principal obstacle to the extraction. Several maneuvers—introduction of the little finger into the canal to dilate it, tractions drawing the auricle forward, and especially movements of the inferior maxilla—often facilitate very much extraction. The movements of opening and closing the mouth impart very distinct movements to the antero-inferior part of the canal and suffice sometimes to urge toward the outside a foreign body deeply involved.

COLLECTION OF ASCARIDES DEVELOPED IN THE INTERIOR OF THE MASTOID PROCESS, AND SPONTANEOUSLY DISCHARGED EXTERNALLY.

L. Vidal (*Jour. de Clin. et de Ther. Infantiles*, No. 48). A child, 22 months of age, who, at the time of the first examination,

had presented for a month a painless tumor back of the right ear. This tumor increased little by little in volume without giving trouble, then opened spontaneously, allowing passage to a clear and not very abundant liquid. A physician called in found a fistula situated parallel to and 1 *cm.* in front of the line of insertion of the auricle—"from the exterior auditory canal came a discharge clear and incessant; the walls of the tumor appeared externally very hard and gave, on percussion, the sensation of an osseous shell." Injections through the fistulous passage of a weak solution of sulphate of copper. After the first injection four small reddish-white worms were evacuated, which the author recognized as ascarides lumbricoides. The following day another evacuation of three worms of the same species. The child was then lost to view.

What passage had the ascarides followed to achieve their migration? The parasite must have mounted by the stomach, the esophagus to involve itself in the Eustachian tube and gain the middle ear, but how explain the passage into the interior of the mastoid? The mastoid cells do not exist in the infant; they are represented by an osseous block of dense tissue, and it is not until later that they communicate with the middle ear. Could there have been in this little patient an exceptionally precocious evolution of the cells and of the petro-mastoid canal?

THE INFLUENCE OF FATIGUE UPON THE AUDITIVE FUNCTION.

Poli (*Arch. ital. di Otol., etc.*, 1894, *fasc.* 4). It is known that the effects produced by excessive muscular labor do not consist solely in the fatigue of the muscles which have been exercised, but make themselves felt through all the rest of the organism; particularly upon the nervous system, and that perhaps through a true auto-infection resulting from the passage into the blood of the excrementitious materials produced by the over-worked organs. *A priori*, these effects should be especially manifested upon the special senses whose delicacy is well-known. Poli tried to find out if there existed in man, after great physical exercise, a modification of hearing. To that purpose he examined the twenty-four first arrivals in a bicycle race of fifty kilometers immediately upon their dismounting from the wheel, then again after a period of rest of from two to seven hours. Only two of the contestants acknowledged subjective noises which were, moreover, diminished by repose. But with nearly all there existed a diminution more or

less marked of the aerial perception for the watch; in some cases the Rinné was negative without the condition of the conducting apparatus giving a plausible explanation of this fact. In the rare cases where he could make an examination with a series of forks, Poli noted a certain diminution in the perception of the high tones. The objective examination showed for all lesions a hyperæmia of the membrane localized at the periphery and along the manubrium. After a repose of some hours the aerial perception increased with sixteen from several centimeters to 1 meter fifty; the increase was especially marked with those who were the least in training, and, therefore the most fatigued; with these, the Rinné which had been negative at the first examination, became positive. With two, the aerial perception was less good; in six, finally who were among the best trained, there was no change. One may conclude from these examinations that fatigue produces in man a diminution of hearing but that that diminution is transitory.

A CASE OF MYXO-SARCOMA OF THE TYMPANUM.

A. Kuhn (*Deutsch. Med. Wochensch.*, 1894, No. 27). A child, 1 year old, suffering from an abundant and fetid otorrhea of the right ear. For several weeks the canal has been obstructed by a reddish-gray mass which fills the auditory meatus completely. Also there exists a fistula on a level with mastoid apex through which the probe penetrates deeply above and forward in the direction of the canal. After removal of the tumor with the snare and enlargement of the fistula, one came upon a tumor inserted deeply in the internal wall of the tympanum which, extending, divided externally into two portions, of which one is developed in the external auditory canal, the other perforating the osseous wall of the canal, penetrated into the mastoid to the level of the insertion of the sterno-cleido-mastoid.

Some weeks after the extirpation the cure seemed assured; there existed only upon the labyrinthian wall a tissue thick and bleeding easily, but not covering any denuded bony surface.

Relapse occurred three months later. Death by cachexia supervened soon afterward.

Microscopically the tumor was a myxo-sarcoma originating in the submucous cellular tissue of the internal tympanic wall where one meets at birth with a gelatiniform embryonic cellular tissue.

ABSCESS OF THE MAXILLO-PHARYNGEAL SPACE; ULCERATION OF THE INTERNAL CAROTID; OPENING OF THE PURULENT POCKET INTO THE PHARYNX AND INTO THE EXTERNAL AUDITORY CANAL WITHOUT LESION OF THE TYMPANUM.

Meslay (*Bull. de la Societè Anatomique*, Dec., 1894, p. 948). This interesting case of acute lateral retro-pharyngeal abscess with ulceration of the internal carotid artery at its superior part was observed in a child five years. The interest of this observation, independently of that of ulceration of the carotid, very rarely observed, lies also in the exit of pus by the external auditory canal without invasion of the tympanum, a thing which would happen in course of time from the proximity of the pus with a region not defended by bone.

In this connection, Broca, who was concerned in the surgical treatment of the child, spoke of having observed another case in which the apex of the petrous bone was soaking in a cavity of pus, and that condition had given rise to an acute otitis media. With this patient there was also ulceration of the internal carotid.

INTRA-TYMPANIC INJECTIONS IN THE TREATMENT OF DRY CATARRH OF THE MIDDLE EAR.

Adolphe Bronner (*Brit. Med. Jour.*, 1894, p. 805). The writer believes that the abandonment of intra-tympanic injections is unjustifiable. He frequently uses this treatment with good results; the deafness progresses less rapidly; after each injection the hearing is ameliorated for a time varying from several days to some months which determines the frequency of the injections. After having tried all the substances recommended, the author uses a 3 per cent solution of bicarb. of soda in a mixture of water and glycerin, equal parts; occasionally he uses parolein, pure or in connection with bicarb. of soda or iodoform. The instruments and liquid are carefully sterilized.

STACKE'S OPERATION IN SUB-DURAL ABSCESSES.

Ferreri (*Arch. ital. di otol., fasc.* 4, 1894). Stacke's operation, which gives excellent results in the treatment of O. M. P. C. with lesions of the ossicles and of the antrum, is applicable as well in the cases where the lesions affect specially the tegmen tympani, there exists in this latter a meningeal irritation, habitually latent

and circumscribed, but which menaces at every instant to propagate itself to a distance and to degenerate into a veritable meningitis. This operation offers, indeed, the best method to reach the purulent collections developed between the dura mater and the internal vitreous lamina of the temporal. The diagnosis of these abscesses is oftenest made only in the course of the operation; a fistulous orifice, from which oozes a drop of pus and into which one may introduce the probe in the direction of the cranial cavity, betrays its existence. The enlargement of this orifice and the exposure of the dura mater are the necessary complements to the operation of Stacke; this intervention alone permits the curing of the patient.

Ferreri has just made an experiment upon a young girl, 20 years of age, with an O. M. P. C. since infancy, and which had been operated upon for the second time for right mastoiditis April 20, 1894; after the operation the retro-auricular wound cicatrized rapidly enough, but discharge persisted by the canal; three months later, pain having supervened in the temporal region at the same time that the right eyelid became edematous. Ferreri practiced Stacke's operation and was constrained in the course of it to lay bare the dura mater to give issue to a purulent collection. In about forty days the patient was completely cured of her discharge and only retained, as a trace of the operation, an infundibuliform cicatrix of the mastoid region.

AUSTRIAN OTOLOGICAL SOCIETY.

Session of May 28, 1895. President, Prof. Gruber; Secretary, Dr. Pollak. Urbantschitsch presented four patients:

Case I illustrates the particularly favorable influence exerted on several occasions by the extraction of the malleus upon the auditory function of the other ear which was secondarily affected. The patient, 34 years of age, had suffered since her 14th year from a left otorrhea, which, after ten years, gave rise to a deafness of the right side. The treatments employed continued to be without effect, and finally the patient could perceive the whispered voice in the right ear at no more than two or three paces.

On February 15, 1891, to cure the suppuration of the attic of the left side, the malleus was removed and found healthy; following this extraction the suppuration diminished sensibly, and at present it is altogether inconsiderable. After the operation, the left ear remained as inert as before from the functional point of view, while, from the day of the operation, the right ear improved

notably as to hearing (whisper heard at four paces) which increased on the following days to ten or twelve paces for the sharp whisper, and which maintained this improvement at the end of four years.

Case II is also one of the extraction of the malleus, which did not improve the hearing for the better ear but which resulted in the cessation of the violent vertigo and prevented the progressively constant diminution of the hearing. After healing a callous cicatrix formed upon the membrane at the place where the manubrium formerly existed, and which gives absolutely the impression of a malleus handle.

Case III presents a tumor of the right auditory canal, osseous and nodular, filling the lumen entirely, that one could get around with the sound from above, in front and below, and which is attached to the auditory canal and the mastoid. This exostosis has the consistency of ivory, even as can be seen in trying to remove it peacemeal from the auditory canal. The tumor will be operated upon soon and the results communicated.

Case IV relates to a benign neoplasm of the left auricle, whose seat is the border of the helix where it passes into the lobule; which diminishes under pressure, is circumscribed, is displaced toward the base of the cartilage and has a more compact consistency in its narrow part. The use of alcoholics, the action of cold, causes the tumor to reach the size of a walnut, which had before only been the size of a hazelnut. At the next meeting Urbantschitsch will define the nature of the tumor, which he intends operating upon.

Discussion: Case I. Politzer asked Urbantschitsch in what manner he explains the amelioration of the hearing in the ear not operated upon. According to Politzer there exists nothing which provokes this phenomenon.

Urbantschitsch believes that one must attribute the synergic action to the two tensors of the tympanum, which has been demonstrated by the experiments upon animals of Pollak and the researches of Gellé.

Politzer said that these explanations were not satisfactory. The synergic action of the tensors in man has not been proven, moreover the unilateral affection of the middle ear of the other side should be much more pronounced, which is not the case here.

Urbantschitsch relies upon the cases which he had presented at the last meeting of the Naturalists, and in which, by means of the the rarefaction of the air of one side, it might influence the power of hearing of the opposite side.

Case II. Gomperż had observed a similar post-operative cicatrix simulating the manubrium.

Urbantschitsch asked Gomperz if this condition might not be attributed to a periosteal excitation of the internal tympanic wall. In his experience there existed no adhesions.

Gomperz responded that, in his case, the cicatrix had united with the internal tympanic wall.

Gruber considered the formation as springing from the superior canal wall.

Urbantschitsch asked if callous cicatrices of the *Mt.* had been seen before?

Gruber had never met with one, and he had never seen more than one membrane develop following the extraction of the malleus.

Case III. Politzer considers the tumor an osteoma springing from the mastoid apophysis and appearing in the external auditory canal. This kind of osteoma is rare. Politzer has not described it in his treatise.

Gruber has seen such cases in his clinic and has operated upon them, but they resembled chondroma.

Pollak, in relation to the genesis of these tumors, reports that he had one case, an osteoma, completely filling the external auditory canal which, a year after extraction, was replaced by a fibrous polyp. Unhappily the patient was lost to view.

A. Politzer. *Rare form of exostosis of the external auditory canal with presentation of the method of their removal.* The author said that in spite of the large number of observations of exostosis of the external auditory canal there were only a few methods for their removal.

Politzer showed a specimen from a scientist of sixty-nine years which he has frequently had occasion to observe for thirty years. Upon the first examination the author found the right external auditory orifice obstructed by an exostosis of a yellow color arising from the posterior-superior border whose free antero-inferior straight border touched the opposite wall of the auditory canal. The patient could furnish no information of the genesis of this exostosis, and could not affirm having suffered previously from otorrhea. The principal symptom was a deafness produced in part by the exostosis, and partly by the accumulation of cerumen and epidermic masses behind the exostosis.

After the removal of these masses, by the means of fine sounds introduced into the auditory canal, an operation which was repeated at intervals of four or five years, the hearing improved,

and an important subjective diminution was obtained. The patient would not consent to ablation of the exostosis. "Several years ago he was sent to me by Dr. Teleki who told me that for several days the patient suffered from violent pain, and that there was a fetid discharge. Again by the introduction of a canula of very small caliber between the exostosis and the wall of the external auditory canal, I destroyed the yellowish-brown putrid epidermic masses and checked the painful symptoms."

The patient succumbed to consumption two years ago, and according to his last wish, Politzer removed his auditory organ for scientific purposes. The specimen presented the following appearance: From the posterior-superior edge of the orifice to the osseous auditory canal starts an exostosis, slightly nodular, of $^1/_2$ *cm.* in length and 1 *cm.* broad. It seems limited by ridges slightly raised from the side of the squama of the temporal and the surface of the mastoid. After the removal of the soft parts and of the antero-inferior wall of the auditory canal, the lumen of the canal was found obstructed by a brownish-yellow epidermic calculus mass which penetrated even into the tympanum by a small perforation of the membrana tympani of the dimension of a lentil. After the ablation of these masses the auditory canal appeared much enlarged, the tympanic margin above the membrana Schrapnelli, about the size of a lentil, and the orifice was filled by a fine cicatrix which touched the malleus and the incus. The superior wall of the auditory canal, up to the small bony edge which limits the superior orifice, was destroyed by pressure, and passes into a cavity of the wall a little larger than a cherry which partly occupies the mastoid region. The base of the exostosis extends to one side in the blunt edge which separates the wall of the auditory canal from the large cavities situated above, on another side it penetrates directly into the cavity. The mastoid apophysis had become entirely like ivory. The superior tympanic cavity and a part of the antrum was filled with newly-formed connective tissue, the middle and inferior tympanic cavities were free; the labyrinth and acoustic canals had experienced no change.

In conclusion Politzer remarked that the exostosis was probably imputable to a previous otorrhea, and that the osseous anomalies of the auditory canal, and in part of the mastoid apophysis, were due to the retention of the epidermic masses. The perforation of the tympanic membrane, as well as the perforation of the osseous cavity directed towards the antrum, have been favorable to the migration of the epidermic masses from the middle ear into the

external auditory canal. It is more than probable that an early destruction would have prevented the formation of the osseous anomalies of the temporal.

A. Politzer. *Presentation of a patient upon whom the radical operation of emptying the cavities of the middle ear was practiced, followed by transplantations of Thiersch.* Woman, 46 years of age, very healthy until now. The origin and first appearance of the aural affection are unknown. One year ago there existed for a short time a slight inodorous discharge from the right ear. Four weeks before her entrance into the hospital she experienced sharp pains in and behind the left ear; since fourteen days the apex of the mastoid has been visibly tumefied.

At the first examination the auditory canal was narrowed, filled with pus, the middle ear filled with soft granulations, the soft parts of the mastoid process normal superiorly and at the middle; at the apex was found an abscess as large as a walnut which appeared spontaneously from a sinus of the size of a head of a pin.

April 18th, last, the radical operation was performed with plastic transplantation of the wall of the auditory canal; in the tympanic cavity and in the attic were found dry cholesteatomatous masses of a whiteish-yellow. The opening of the fistula into the abscess at the mastoid apex gave entrance directly to the inferior wall of the tympanic cavity.

April 24th. Thiersch's transplantation was done with a strip of skin taken from the exterior of the forearm. It proved a perfect success upon the anterior and inferior walls of the canal of the wound, upon the posterior wall the new tissue was ragged. In spite of the formation of the epidermis of the anterior and inferior walls of the canal producing adhesions, a new transplantation was made for the posterior wall. Politzer believes that the permanent opening of the canal of the wound in the mastoid process is the surest means to prevent the return of the cholesteatoma.

Urbantschitsch has employed in some cases the transplantation after the method of Siebenmann-Bezold. He has also made the transplantation in a case of cholesteatoma, and after twelve days of observation the success seemed complete.

ABSTRACTS FROM FOREIGN CURRENT OTOLOGICAL LITERATURE.

By T. Melville Hardie, M. D.,
of Chicago.

THE TREATMENT OF TINNITUS AURIUM.

A valuable report upon this subject was presented by Drs. Miot and Herck[1] at the last meeting of the French Society of Otology and Laryngology.

The authors suggest the following classification:

I. Entotic or periotic noises, generally perceptible by both physician and patient.

II. Tinnitus proper, noises and sensations without apparent acoustic cause.

A.—Tinnitus due to a lesion of the auditory apparatus:

1. In diseases of the external ear.
2. In diseases of the middle ear.
3. In diseases of the internal ear.

B.—Tinnitus compatible with integrity of the auditory apparatus:

4. In diseases of the nervous system.
5. In mental diseases.
6. Reflex.

It is very generally recognized by otologists that treatment of the tinnitus alone is very often ineffective, and that a preliminary investigation into the cause of the trouble, whether depending upon systemic disease or a local condition, is not merely valuable but necessary. The diseases of the ear itself which frequently cause tinnitus are first considered; I. Tinnitus in affections of the external ear may be due to: (1) Hyperæmia of the soft tissues of the meatus and drumhead, or by reflex action on the muscles of the middle ear, on the branches of the auditory nerve, etc.; (2)

[1] *Rev. de Laryngol. d'Otologie*, etc., 1, June, 1895.

obliteration or hyperæmia of the meatus by cerumen, etc., with consequent pressure on the drumhead and later on the perilymph and reflexly on the labyrinth; (3) inflammations of the external meatus, furuncle, parasitic otitis, syphilitic otitis, etc. The treatment in these cases is frequently effective.

II. Tinnitus in affections of the middle ear. In affections of the tympanic cavity and Eustachian tube the tinnitus may depend upon (1) an inflammatory condition of the mucous membrane capable of producing a hyperæmia of the labyrinth. This can be modified advantageously by cold applications and bleeding (leeches), by inflation of the middle ear and removal of secretion if any is present; (2) a subacute or chronic catarrhal condition with or without tubal obstruction. The patency of the tube must be restored if obstruction exists, absorption of the products of inflammation facilitated where possible by inflation of the middle ear and paracentesis followed by irrigation of tube, and tympanic cavity practiced when necessary. In narrowing of the Eustachian tube bougies may be employed; when its lumen is obliterated the cicatricial tissue may be destroyed with the galvano-cautery or it may be perforated, or a permanent perforation of the tympanic membrane produced; (3) in sclerosis or dry otitis media the best results are secured with the "masseur" of Delstanche, intra-tympanic injections (iodin in vaselin) and counter irritation (blisters) over the mastoid process. When the tinnitus appears to depend upon the existence of synechiae, retractions, anchylosis, the appropriate operation, as myringectomy, section of anterior or posterior fold, tenotomy of tensor tympani or stapedius, mobilization of the stapes, removal of one or more ossicles may be attempted, but the authors agree with the majority of otologists in believing that good effects, when secured at all, are not permanent. Among medicaments may be mentioned potassium bromid in large doses, particularly in neurasthenic cases, quinin alone or with iron, iodid of potassium (in syphilis); as instillations: hot water, ether, glycerin, particularly the last in extreme dryness of the drumhead and external meatus; hypodermically: morphin strychnin and pilocarpin; (4) when the tinnitus is due to an otorrhoea with persisting perforation the authors recommend the constant current, 6 or 8 milliamperes for five to ten minutes, the positive pole over the auricle, the negative at the back of the neck. Counter irritation over the mastoid is also useful but must be used with caution. (5) Noises having their origin in an affection of the tympanic membrane exclusively are comparatively infrequent and their extended

consideration may be omitted in this notice. Among the more important may be mentioned relaxation of the membrane in which collodion gives the best result, if there is not too great atrophy of the fibrous layers. If the atrophy is advanced artificial perforation may be tried. The noises co-existing with synechiae and exaggerated tension are sometimes much lessened by the application of collodion. Surgical interference is sometimes necessary, but when the tension is due to retraction of the membrane in dry otitis media, has, as a rule, but a temporary effect.

III. Internal ear. The pathological conditions of the labyrinth causing tinnitus are anæmia, hyperæmia, extravasations of blood, inflammation and chronic lesions of the labyrinth. (1) Anæmia may be caused by general anæmia or be the result of aneurism of the basilar artery, atheroma of the internal auditory, etc.; (2) in hyperæmia the cause must first be determined. If there is cerebral congestion and redness of the face Leiter's tubes are indicated and a little later mastoid counter-irritation, intestinal derivatives, bromid and iodid of potassium, pilocarpin, galvanism applied to the upper cervical ganglion of the sympathetic. It must be remembered that the hyperæmia may come from the administration of quinin, salicylic acid, etc.; (3) in hemorrhages into the semi-circular canals, vestibule and cochlea, one may at first employ the means already suggested in hyperæmia, and when the active stage has disappeared, (third week), pilocarpin subcutaneously. In Menier's disease Charcot has used sulphate of quinin with benefit. This should be used for one fortnight only. In the treatment of (4) inflammation of the labyrinth occurring, *e. g.*, as part of a panotitis in scarlet fever and in (5) chronic hyperplasias and degenerations following hyperæmias, hemorrhages and inflammations of the part, but little of advantage can be suggested. The possibility of syphilis must always be considered.

IV. Tinnitus in diseases of the nervous system. Among the affections in which it may exist are arterio-sclerosis affecting the cerebral arteries, tumors, acute bulbar myelitis, tabes, cervico-occipital neuralgia, and in neuroses (epileptic and hysterical aura, neurasthenia, migraine).

V. Tinnitus in mental diseases.

VI. Tinnitus of reflex origin is unusual. Sufferers from stomach troubles, for example, have frequently a beginning sclerosis of the ear and the subjective sounds so frequently noticed in connection with uterine affections may often be attributed to the anæmia or neurasthenia of the patient.

PROCEEDINGS OF THE FOURTH MEETING OF THE GERMAN OTOLOGICAL ASSOCIATION.*

THE FILLING OF DEHISCENCES IN THE TEMPORAL BONE BY FIBROUS MEMBRANES—AFFECTIONS OF THE RECESSUS HYPO-TYMPANICUS—LUCAE'S PRESSURE-PROBE AND RINNE'S TEST—POLYMYOSITIS INFECTIOSA EX OTITIDE—HAEMORRHAGIC EFFUSIONS IN EAR FOLLOWING A PULPITIS—THE PATHOLOGY AND THERAPY OF OBJECTIVE TINNITUS—THE TREATMENT OF ACUTE PURULENT INFLAMMATION OF THE MIDDLE EAR AND MASTOID PROCESS—LEPTOMENINGITIS FOLLOWING ACUTE PURULENT OTITIS MEDIA—NEW METHOD OF COVERING LARGE DEFECTS IN THE BONE CAUSED OF OPERATIONS ON MIDDLE EAR AND MASTOID—METHODS BY OPERATION IN THE VARIOUS BRAIN COMPLICATIONS OF OTITIC ORIGIN—IRON, SILVER, LEAD AND MERCURY IN DISEASES OF THE EAR—SHALL WE BE CONSERVATIVE OR RADICAL AS REGARDS OPERATION IN ACUTE MASTOIDITIS?—AN UNUSUAL CASE OF OTITIS EXTERNA—THE PROPHYLAXIS AND TREATMENT OF PURULENT OTITIS MEDIA IN INFANTS.

1. Hartmann showed four preparations illustrating the filling of dehiscences in the temporal bone by means of a fibrous membrane. In two of the cases the substitution of membrane for bone occurred in the roof of the mastoid antrum, in one case in which death had resulted from sinus thrombosis the membrane was on the posterior surface of the temporal bone. In none of these cases was there union with the dura mater for which the membrane might be mistaken in operations. In the fourth case, the membrane replaced in part the bony tegmen tympani, a very unusual developmental anomaly.

2. Kretschmann discussed the varieties of otitis media purulenta which chiefly affect the inferior portion of the antrum named by him the recessus hypotympanicus. Its irregularities extend below the wall of the meatus externally, below the labyrinth on the inner side, helow the Eustachian tube forward and posteriorly as far as the facial canal. Its very intimate relations with the internal carotid, jugular bulb and facial nerve give it a particular importance; exact diagnosis is only possible where the drumhead is absent either altogether or in its lowest part. The inflammation most frequently affects the posterior part of the recessus in which

* Held June 1 and 2, 1895, at Jena. Translated and abbreviated from the *Archiv. für Ohrenheilk.*, XXXIX, 2 u. 3, and *Monatschr. für Ohrenheilk.*, by T. Melville Hardie, M. D., of Chicago.

one may discover granulations or foul smelling pus. In many cases the patient complains of a feeling of tension about the middle of the sterno.cleido-mastoid which is aggravated by touching the floor of the recessus with a probe. Treatment consists in irrigation with the Hartmann curved cannula and cauterization with lactic and trichloracetic acids. Kretschmann had exposed the recessus hypotympanicus in two operations on the mastoid which required removal of the posterior wall of the meatus.

In the discussion O. Wolf recommended his sharp curette which has a shank permitting of the rotation and use of the curette in any direction. In the discussion Hessler opposed the use of the curette through the external meatus on account of the possibility of causing facial paralysis. Walb suggested the use of the intra-tympanic mirror. Kretschmann thought it of no value in either diagnosis or treatment of the affection.

3. Lucae in examining forty-six cases treated by pressure probe in which the diagnosis between sclerosis and labyrinth affection was difficult, compared the results secured on treatment with the pressure probe on cases in which the Rinne test was positive, and negative respectively. The cases, twenty, in which Rinne was positive, with one exception, were much improved. Improvement was obtained also in those cases (8) in which Rinne was before the treatment negative, and after treatment positive, while of the remaining eighteen with Rinne constantly negative, twelve were improved and six not improved at all. The cases in which Rinne was positive had furthermore better perception of all musical tones, and he concludes that there was present in these a mild affection of the sound conducting apparatus without asserting that no labyrinth trouble existed. He mentioned two cases of undoubted labyrinth affections in which the pressure probe was of great use; in one patient a single use of the instrument noticeably improved the hearing for three months; the second was that of a girl, 3 years of age, who was completely deaf after meningitis. Eleven years later she could hear conversation with difficulty with the right ear; of musical tones the lowest were well heard, the medium high and higher comparatively well heard, C_4 and C_5 not heard at all. After a brief treatment with the pressure probe perception of C_4 returned, with coincident improvement for conversation.

4. Haug reported three cases of polymyositis infectiosa ex otitide. The abscesses were in the muscle substance and developed during the progress of an ordinary attack of acute purulent otitis media

without any general infection being present. In the first case metastatic streptococcus abscesses formed in the left deltoid, in the upper third of the left gastrocnemius, in the neighborhood of the left supinator longus, the right abductor magnus and the left masseter. Cure of ear and pyæmia in six weeks. In case II, the rigor occurred on the nineteenth day and the wrist joint next morning was swollen and painful; this disappeared, however. Three days later more pain in the ear; an exudation visible in Shrapnell's membrane was evacuated, but on the following day an abscess developed in the right forearm. Case III, in a girl 20 years old a traumatic rupture of drumhead was followed by an acute middle ear inflammation, perhaps produced by infective injections of oil and milk. At the end of the second week empyema of the mastoid. After operation the ear affection progressed normally. In the seventeenth week an abscess in the supraspinatus had to be opened; an infiltration on the deltoid disappeared of itself, but slowly, causing pain in the upper arm for a month afterwards.

5. Haug also gave the details of a case in which hemorrhagic effusions in the middle ear and in the external meatus followed a pulpitis of an upper molar. The pain in the ear followed the dentalgia in about eight hours. Nothing had been injected into the external meatus, the naso-pharynx was healthy, and no general disease was to be made out. Examination of the ear showed a typical "blood-blister" the size of a bean on the antero-inferior wall of the meatus, the drumhead was slightly reddened and its posterior half projecting and colored blue-red. On examination of the teeth a dark blue "blood-blister" could be seen filling the cavity of the next to the last left upper molar. Extraction of the tooth and simple closing of the external meatus resulted in complete *restitutio ad integrum.*

6. Kayser. On the pathology and therapy of objective tinnitus. These are vessel or muscle noises, the latter are either of entotic or tubar origin. Tonic contraction of the tensor veli palati produces the so-called autophony which may also come from scar contraction or the atrophy of inanition of the wall of the tube. It is in this way that noises produced in the naso-pharynx by breathing or speaking are conducted through the open tube to the ear. These may be stopped temporarily at least by smearing the mouth of the tube with vaselin introduced by a catheter; clonic jerkings of the tensor palati produce a peculiar crackling and clicking. Crepitation in the tube produced by the separation of its moist

walls is conducted to the ear and apparently produced there. With this are sometimes seen movements of the uvula and pharyngeal muscles, rarely of the tensor tympani. This variety is related to chorea and hysteria. Many therapeutic suggestions have been made. Pressure on the uvula over the mastoid, over the vagus have all been tried with varying success. In three cases Kayser secured good results from the introduction through a catheter of a bougie throughout the entire length of the cartilaginous portion of the tube. The treatment sometimes produces a lasting result. In the discussion Zaufal described his method of treating by massage, autophony and the various pathological conditions of the musculature of tube and palate. The finger in a "stall" of rubber is introduced into Rosenmüller's fossa, groove, strokes and presses, and is inserted into the mouth of the tube, presses the floor of the tube-mouth and the lateral wall downward and forward; finally the adjacent part of the soft palate is drawn downward with the hooked finger. If this fails he would do a tenotomy of the Salpingo-pharyngeus muscle.

7. Hessler. The treatment of acute purulent inflammation of the middle ear and mastoid process.

With pus in the middle ear it is only necessary to have a sufficiently large opening of the drumhead—by paracentesis if required. Irrigations do not remove the pus and are to be avoided in acute cases. The pus is removed with lightly rolled gauze or cotton pledgets, and the meatus must not be tamponed. The air douche is contra-indicated in the acute stage and may be injurious where catarrh of naso-pharynx, adenoid vegetations, etc., exist. The ear will frequently get well without special treatment if the naso-pharynx is properly looked after. Insufflations of boric acid are unnecessary and may be dangerous. In secondary involvement of the mastoid Hessler advises immediate operation; warm Preissnitz compresses are used only in simple catarrh of middle ear and mastoid; when pus is present, ice bags over the mastoid are to be used in the beginning only; counter irritation masks the true state of affairs, and for ten years past has not been employed. The typical Schwartze operation is done; all softened carious bone is removed. The opening in the bone varies between 5 and 8 *mm.* The wound is not irrigated but loosely tamponed with strips of iodoform gauze, tightly tamponed only when parenchymatous bleeding results from the operation. The bandage is changed in from one and one-half to three days, the secretion at the bottom of the cavity is wiped away with strips of sterilized gauze $1\frac{1}{2}$ to 4

cm. long. The meatus is not tamponed. Sterilized gauze is preferred for the later dressings. The patient leaves his bed on the third fever-free day.

Discussion. Panse would not permit the patient to cleanse the ear himself because of the necessity for asepsis. He loosely tampons the meatus with strips of iodoform gauze and drains the secretion into the dressing secured by a bandage, which is changed when necessary. Stacke avoids irrigation in acute trouble; also the forcible use of pledgets of cotton. His treatment consists in a sufficiently frequent change of dressing. After chiselling he tampons to the bottom of the wound to prevent any narrowing which might prevent accurate observation of the condition of the cavity. Brieger also opposed Hessler's method of allowing the cavity to close of itself. Healing should take place from the bottom so that there will be no retention of pus. Noltenius agreed with Brieger.

8. Joel. Leptomeningitis purulenta following otitis media purulenta acuta. In a child 3 years old an attack of measles was followed by purulent otitis media; mastoid empyema with typical operation. Five days later vomiting, fever, headache, paralysis of facial and abducens, obstipation, delirium. No changes in the fundus. Death nineteen days after the operation. Post-mortem showed extensive basilar meningitis; no carious spots on the inner surface of the temporal; the internal auditory meatus filled with pus. The only cause for the meningitis that could be suggested was an extension of the purulent process through the labyrinth probably after destruction of the membrane of one of the fenestræ. A second case was that of a boy 4 years old in which a meningitis resulted from an influenza which came on during a purulent affection of the middle ear.

9. Stacke. A new method of covering large defects in the bone caused by operations on middle ear and mastoid. The first incision is made along the attachment of the auricle, backward around the tip of the mastoid then upward as far as the linea temporalis. This flap consisting principally of skin is reflected upward. Another incision through the periosteum, but with its base at the mastoid tip is then made and the periosteal flap raised with a raspatory as far as the insertion of the sterno-mastoid and turned down. At the conclusion of the operation the two flaps are laid over the covered bone and there retained. If the periosteal flap is not large enough a third skin flap is made posterior to the original incision, this raised, the periosteum reflected and made to assist in

covering the cavity, the skin flap being replaced. In the discussion Kretschmann asked whether an atrophy of the transplanted portions could be prevented and whether there was not danger, on account of the length of the flaps, of their overlapping the epithelium lining the middle ear and so not uniting. Noltenius preferred Koerner's method. He, where possible, avoided the making of flaps. Stacke, in reply to Kretschmann said, that he advised flaps only long enough to cover the parts; that union took place in the middle ear as the attic and aditus were always so thoroughly curetted that no epithelium was present. He was astonished to hear from Noltenius that his cases operated upon with the Koerner flaps were completely healed in four to six weeks. The flaps didn't reach very deep and could hardly influence favorably the conditions in the wound cavity. He had hitherto always opposed a persistent retro-auricular opening, but where, as by this method, the time required for healing could be markedly curtailed he would favor it, and thought his method should be tried in appropriate cases. Siebenmann's method is not to be compared with his own since Siebenmann permits the cholesteatoma-skin to remain, and this is not a cure, but only a persistent prophylactic exposure of the diseased part to prevent later retention of its products. Zaufal thought that if the method did what was said of it, it was a great advance. Latterly it had been his custom to use Koerner's method, the chief advantage of which lay in the wide opening through the meatus secured by it, as one could so easily inspect the cavity. By it also one avoided the disagreeable retro-auricular opening. He had seen complete healing in six to eight weeks by the Koerner method. Koerner: The proposal of new methods showed that no one was suited to every case. The great advantage of his method was the short duration of healing necessary, on an average of seventy to eighty days. Brieger thought that the time of healing in the Koerner operation variable, as in other methods. In one case he had perichondritis auriculae with a somewhat extensive necrosis of the cartilage. He thought, however, that the functional results were, as a rule, better than when a retro-auricular opening persisted. Panse claimed priority over Koerner in the description of the so-called Koerner flap-method.

METHODS OF OPERATION IN THE VARIOUS BRAIN COMPLICATIONS OF OTITIC ORIGIN.

10. Koerner. One cannot always speak positively as to the seat of the pus from the brain symptoms present. In the early history

of brain surgery only large abscesses situated in the temporal lobe could with certainty be diagnosticated. It was established post-mortem that almost all otitic abscesses of the brain were situated very near the seat of the primary collection of pus, in the ear or temporal bone. When the abscess is in the temporal lobe the tegmen tympani and tegmen antri are diseased and the evacuation of the abscess may be undertaken, as Koerner first suggested, at the same time that the diseased bone is removed. McEwen removes the superior wall of the meatus and the tegmen and so exposes the temporal lobe. Occasionally he makes an additional opening in the pars squamosa above the posterior margin of the meatal wall. Bergmann opens the middle cerebral fossa directly above the bony meatus; after cutting around, separating and turning down the upper half of the auricle, he elevates the dura, and easily and quickly reaches the tegmen, whence the pus can be sought for in every direction. Since surgeons have given up the old method of trepanation, and have endeavored to trace, from the primary focus the course of the infection, cerebral abscesses have been operated upon with greater success. Regarding the after-treatment there is considerable difference of opinion: McEwen uses drainage tubes which can be absorbed, others loosely tampon the cavity. Eulenstein made the observation that tamponing too tightly may cause a return of the cerebral symptoms. In very irregular cavities careful irrigation under artificial light is necessary to prevent retention of pus. Such retentions are often confused with second abscesses; at any rate, a second abscess in the immediate neighborhood of the primary one is frequently discovered post-mortem in patients who have been operated upon, while, when no operation has been done during life, only one abscess is found.

Jansen. It is important to know first the relative frequency of the various diseases in which intra-cranial collections of pus occur. In the Berlin clinic during the last three and one-half years in 184 hitherto unpublished cases, in which pus developed within the cranium, 148 were extra-dural abscesses, thirty-five thromboses of the sinus transversus, and five abscesses of the brain; cases of meningitis are not included. In the extra dural abscesses the pus was in the posterior cerebral fossa 161 times, in the middle thirty-eight times and in both fourteen times. Extra dural abscesses, therefore, are by far the most frequent complication of purulent otitis media, particularly of the acute form. These figures afford useful hints as to the method to be followed in cases of doubtful

diagnosis. In many cases where the abscess in the mastoid process, and the pus focus in the sinus, constitute practically a single abscess, a simple evacuation is all that is required. In other cases the following procedure is adopted: After opening the mastoid process and antrum the posterior bony wall is removed piecemeal with a straight chisel until the antero-lateral wall of the sinus appears. The sinus must, where possible, be exposed so far as it is diseased. Deeply-seated collections of pus are best reached after removal of the entire posterior wall of the mastoid process. This is effected most easily with long-bladed bone-forceps and quite small chisels. If the abscess extends to the jugular foramen, the sulcus transversus, and where necessary, a part of the floor of the posterior cerebral fossa are chiselled away. If the portion of the sinus wall first exposed is healthy, the posterior fossa must be so opened that the sinus and dura can be raised from the posterior wall of the temporal bone. If no pus is seen here, and symptoms pointing to a collection in the posterior fossa exist, Jansen recommends the laying bare of the upper knee of the sigmoid sinus with its horizontal continuation backwards. The opening of the middle cerebral fossa is best done from the upper half of the linea temporalis. If the inferior portion of the pars squamosa is removed, the entire upper surface of the pyramid can easily be inspected.

The deep-seated extra dural abscesses which follow a rupture through one of the semi-circular canals, or along the facial and superficial petrosal nerve, are nearly all produced by acute middle ear inflammation. To get at these it is necessary to open the middle cerebral fossa from the squamous portion of the temporal, and to remove the upper and posterior wall of the pyramid until the labyrinth is exposed. To prevent extension along the acusticus the opening of the vestibule must follow. From above and behind the posterior half or two-thirds of the superior semi-circular canal, and when required, the inferior in whole or in part, are removed with small straight chisels, and from behind the posterior half of the horizontal semi-circular canal when the vestibule is exposed.

In none of the cases of abscess of the temporal lobe, operated upon by Jansen, could an extension from the temporal bone to the brain be discovered, notwithstanding the fact that the situation of the abscesses was directly over the tegmen tympani. To reach them the posterior and upper wall of the mastoid was completely removed as far in as the labyrinth, which was untouched; then a portion of the pars squamosa and the tegmen are removed, and the parts are exposed on the median side as far as the opening of the Eustachian tube and the cochlea.

As a general thing the sinus can be laid bare in the method described above for abscesses about the sinuses. The thrombosed section is opened forwards and downwards as far as the jugular foramen if necessary, until one comes to an uncolored thrombus; posteriorly it is better to proceed several centimeters beyond the limit of the thrombus. Free drainage is guaranteed by the removal of the outer wall of the sinus. When it happens that the septic condition in the sinus transversus has not developed a solid thrombus, Jansen ties the jugular vein before doing anything further to the sinus. The facial vein is next tied and cut with a blunt-pointed knife as near the base of the skull as possible. Of twenty-five recent cases of thrombosis of the transverse sinus eleven cures were obtained; one after simple evacuation of abscesses about a sinus, eight after opening a thrombosed sinus, and two in which in addition the jugular vein was tied. In five cases of simple opening of the sinus, and four cases in which the jugular had also to be tied, death occurred.

Discussion—Brieger: It is undoubtedly correct to search for the brain abscess chiefly from the opened middle ear cavities. Where the symptoms are doubtful, however, it must be remembered that by this operation infection of the pia mater becomes possible. To obviate this danger he operated as follows in one case. Some time after the opening of the middle ear cavities, notwithstanding the fact that the dura in the middle fossa was exposed, he made a temporary resection in the pars squamosa and from this opening sought for the abscess in the direction of the first operation cavity. As he could find none he replaced the parts, and cure resulted in a short time without complications.

Kretschmann objected to the use of a sharp curette for evacuating the broken-down thrombus masses, since the bleeding would make probable a new infection when with the removal of the wall of the sinus in the entire extent of the thrombus one might wait for the spontaneous emptying of the diseased masses. Joel was strongly in favor of the opening of the cranial cavity after extensive operation upon the mastoid process. Hansberg asked Jansen whether he had seen prolapse of the brain after extensive operation in any of his cases. One of his own cases, a girl, 20 years of age, had had purulent otitis media dextra since childhood; for two years suffered from headache. Chiselling; attic carious; removal of ossicles; after two and one-half weeks severe headache, vomiting, choked disc, slowing of pulse. An opening was made in the pars squamosa, the roof of the meatus was removed as far as the tegmen tympani and

a large abscess, which lay directly above the pyramid, freely opened. Prolapse of the brain on the fifth day, in two weeks meningitis, which resulted fatally. Kümmel wished to know whether experiments had been made as to the most suitable place for puncture of abscess of the brain and as to the possible bad results which might follow numerous punctures into the brain substance. Kessel thought that the results of operative procedures upon the labyrinth went to disprove the existence of a sixth sense, as disturbances of equilibrium had not been reported in any case; the clinical symptoms occurring could all be referred to the ventricle. Koerner, referring to the question as to diagnostic puncture, said that the abscess was frequently missed, in one case reported only the ninth puncture reached the abscess. Much might be learned as to their position from the post-mortem table. Punctures are to be made through healthy dura to prevent the conveyance of infection into the brain substance. In his reply Jansen said that as the sharp spoon was used only in the septic broken-down part of the thrombus, it could not do any harm. He had seen prolapse of the brain in all cases of cerebral abscess; in his opinion there was a greater tendency to gangrene when the incision was small and the opening in the dura insufficient. With large incisions the prolapsed portion became rapidly covered with granulations. A prolapse can only cause meningitis through pus retention, *e. g.*, by incompletely opened extra dural abscess or by gangrene of the prolapsed portion. He had seen no ill effects from the use of the trocar. The canal made shortly disappeared. To Kessel he replied that his operations on the labyrinth concerned for the most part those in which the physiological function was already destroyed by the pus and granulations. In these, dizziness and nausea were often present. When a healthy labyrinth was injured dizziness, nausea, vomiting, and nystagmus almost invariably occured. Zaufal recalled a case in which the trocar had caused not only a meningitis, but a linear brain abscess which corresponded in thickness with the trocar which had been used.

IRON, SILVER, LEAD AND MERCURY IN DISEASES OF THE EAR.

11. O. Wolf. Iron is of considerable value in those trophic disturbances of the auditory nerve which are often present in anemia and chlorosis. Lead poisoning with its symptoms of dizziness, tinnitus, and slow but constant decrease in hearing power,

may be quite difficult of diagnosis. Wolf presented a report on a series of cases of lead intoxication, which in the acute stage caused probably a serous exudation in the labyrinth which could be re-absorbed before degenerative changes took place in the cochlear nerve fibers, but which in the chronic stage caused a degeneration of the acusticus. While acetate of lead is of value in eczema of the external ear and meatus it should not be used in otitis media purulenta, as the secretion is not permanently lessened and deposits of lead albuminate and sulphate are formed which are difficult of removal. Siver nitrate does not stop the discharge permanently, and used as a hair dye may cause disturbance of hearing; for example, subjective noises. Mercury may, like lead, cause acute labyrinth troubles. A 1% solution of sublimate alcohol is valuable in chronic otorrhea. Wolf has seen but little benefit result from mercurial inunctions in syphilitic affections of the ear. An interesting case was cited. A girl, 14 years of age, who suffered from an exudation in the knee-joint was also almost blind and deaf. She had, in the five weeks previous to coming under his observation, received fifty mercurial inunctions of 3 grammes, with sight and hearing becoming less all the time. Under iodin-ether injections through the Eustachian tube, painting of mastoid and knee with iodin, pilocarpin injections and potassium iodid internally the hearing was improved. Hearty consumption of meat was followed by a very large panniculus adiposus, and at the same time a lessening of seeing and hearing ability. After taking a Kneipp cure for eight weeks she was greatly improved in every way.

Discussion: Szenes. Great benefit was derived in acute eczema, particularly at the beginning, from cold applications with lead water or Goulard's lotion. When this stage is past, the treatment should be with ointments. He agrees with Wolf as to sublimate alcohol. In very sensitive individuals one may first instill a little of a 50% cocain solution.

Stimmel has used with success sublimate alcohol in acute and chronic purulent otitis; in the acute cases he waits until the inflammatory symptoms have lessened. An improvement is its use alternately with a 2% solution of resorcin. He considers the careful use of the Politzer air bag not injurious. His results with mercurial inunctions differ entirely from those of Wolf.

Reinhard employs inunctions in syphilis of the internal ear, but combines with it pilocarpin injections.

SHALL WE BE CONSERVATIVE OR RADICAL AS REGARDS OPERATION IN ACUTE MASTOIDITIS?

12. Szenes asks whether we shall be conservative or radical with regard to operation in acute cases of mastoid inflammation, and pleads for the "goldene Mittelstrasse." His inclinations, however, if one may judge from the general tenor of the paper, are strongly conservative. As an illustration of the progress of a mastoid empyema under conservative treatment, Szenes describes a case of acute otitis media purulenta in which, notwithstanding paracentesis, leeching and antiphlogistics, the characteristic symptoms of mastoid empyema supervened. No operation was performed, but cure, nevertheless, resulted; the perforation in the drumhead closed in twelve weeks.

AN UNUSUAL CASE OF OTITIS EXTERNA.

13. Szenes also describes an unusual case of otitis externa. A nurse infected herself from a vaccine pustule on a baby's arm. The meatus was filled with fetid pus and diffusely swollen; the drumhead was not affected. At the end of three weeks a smallpox scar could be seen on lower wall of the external meatus.

THE PROPHYLAXIS AND TREATMENT OF PURULENT OTITIS MEDIA IN INFANTS.

14. Walb. Treatment consisted in the removal of secretion with the Politzer bag. Prophylaxis: recognizing the frequency of infection from the nose, Walb considers of particular importance a cleansing of the nose as soon as possible after birth. With this he uses inflation of the ear with a small bag; the second nostril is not to be closed. If infection already exists inflation is to be performed with the other nostril closed.

Hartmann recommended the dry removal of the secretion. If this was ineffectual the cleansing could best be done with peroxid of hodrogen in solution.

Bechmann was not in favor of the air douche as recommended by Walb.

Zaufal, while recognizing the usefulness of Walb's procedure, was strongly opposed to its general employment.

ABSTRACTS FROM CURRENT AMERICAN AND ENGLISH OTOLOGICAL LITERATURE.

By Leonard A. Dessar, M. D.,
of New York.

THE PRIME EFFECT UPON THE EAR OF NASAL STENOSIS

Dr. B. Alex. Randall (*Medical Examiner*, August, 1895) states that in many cases where the ear is stopped up for a longer or a shorter time as an early effect of a coryza, there is present no stenosis of the Eustachian tube or filling of it with secretion. The drumhead may be devoid of the faintest congestion or other abnormity, unless visibly pressed inward; the tube-mouths may be neither swollen nor clogged with secretion; inflation by the Valsalva or Politzer method is usually very easy; and yet the discomfort and impaired hearing is often quick to return after momentary relief, with nothing but nasal stenosis to account for it. This obstructive condition is almost invariably anterior, perhaps not extending anywhere near the tube-mouths, and may be vaso-motor rather than truly inflammatory. The same symptoms may be met in more severe and extensive cases where the causes above named may share in its production, or be less easy to exclude.

OTITIS MEDIA AS A COMPLICATION OF PNEUMONIA.

Dr. F. P. Ball (*Medical News*, September 21, 1895) reports three cases of otitis media complicating catarrhal pneumonia in children, and attended with very marked and decided cerebral symptoms. He believes that this complication of pneumonia has been quite frequently overlooked because the symptoms are referred to the brain instead of the tympanum, and that its importance is quite as often not appreciated. The cases reported illustrate the close relation between the pneumonia and the otitis media; the symptoms of the latter so much resembling meningeal inflammation that a differential diagnosis was exceedingly difficult.

Although all the symptoms of meningitis were present, viz: the headache, vomiting, delirium, restlessness, fever, coma and deafness, there was, in reality, no inflammatory action in the cerebral meninges whatever. In two of the cases the symptoms of meningitis subsided immediately on the relief of pressure by the liberation of the pus from the tympanic cavity, and in the other case practically the same thing occurred, probably by discharge through the Eustachian tube. The author, therefore, thinks it quite evident that in these cases the condition is not due to inflammation of the meninges, but is the result of pressure within the tympanic cavity upon the sinuses and veins, and that it is relieved instantly when the pressure is removed. An examination of the ear with a head-mirror and speculum is the most important, and probably also the only certain method of making a diagnosis, and this assists very materially, not only in the diagnosis, but also in the treatment of the case. As it is known that there may be invasion by the pathogenic bacteria of the tympanic cavity in pneumonia, tuberculosis, etc., as well as the exanthematous diseases, it seems to him it would be a wise precaution to use antiseptic throat washes in these cases, also in order to prevent what might become a serious complication. The prognosis depends a good deal on the plan of treatment, or on the success of the efforts of nature at liberating the exudate confined within the tympanic cavity. If the pus is discharged, either by perforation of the drum or through the Eustachian tube, relief is speedy and recovery quite sure, unless this fortunate circumstance is too long delayed. If the pus is not liberated, death may result from the pressure on the cerebral vessels, or there may be burrowing of the pus, resulting in meningitis and death. Hot douching of the ear, inflations through the Eustachian tube, and at the proper time the liberation of pus by surgical means, are recommended.

ACUTE ATTICAL DISEASE.

An interesting article on this subject was read by Dr. J. O. Tansley before the American Otological Society, July 16, 1895 (*Medical Examiner*, September, 1895). He strongly advocated early free incision into the tissues overlying the attic as soon as those tissues are seen to be markedly reddened, without waiting at all for bulging, claiming in this way to promptly cure many cases which would otherwise run into mastoiditis. Dr. Tansley also showed a bandage useful for retaining in place the dressings after double mastoid operations.

MASTOID OPERATIONS IN DIABETES.

Dr. Buck reported a few cases before the American Otological Society, July 16, 1895 (*Medical Examiner*, September, 1895), and quoted some statistics which made clear two facts: (1) The prognosis of mastoid operations in diabetics is much more grave than in uncomplicated cases; and (2) that nevertheless we can by early operation, save a good proportion (more than 50 per cent) of such cases.

DEAFNESS FROM INTRA-NASAL DISEASE.

Dr. John A. Thompson, in a paper read before the Ohio State Medical Society (*Jour. Am. Med. Ass'n.*, August 24, 1895) cited the conclusions of Swineburne, who, on the ground of careful examinations of the nose and throat in 1,000 cases of deafness, stated that in 95 per cent of all cases the primary lesion is in the nose or naso-pharynx. The manner in which disease in these organs produces chronic inflammation in the tympanic cavity has been a question of dispute. Some assert it is due to the direct extension of inflammation by continuity of tissue. Others have thought we could trace the resultant ear disease, secondary to obstructive lesions in the upper respiratory tract, to imperfect aeration of the middle ear. Still others have thought that the interference with the circulation in the internal and middle ear by the inflammatory and neoplastic changes in the nose or nasal pharynx, was the cause of the secondary disease. The author thinks it probably that each method plays a part in the production of secondary diseases in the middle ear, but has encountered some cases which suggest that there is a relation, not yet understood, between the healthy condition of the nose and naso-pharynx and the sense of hearing. In the three cases reported by him there had been a serious and irremediable impairment of the organ of hearing, yet in all, the ability to hear has been greatly increased by restoring the nose and throat to their normal condition.

VIBRATORY TREATMENT FOR DEAFNESS.

In a paper read before the San Francisco County Medical Society, May 14, 1895 (*Occidental Medical Times*), Dr. E. S. Clarke stated that good results may often be obtained by vibratory treatment when other methods have failed. The cases benefited are not confined entirely to those having catarrhal affections, for those where the drum membrane has been destroyed by chronic

otorrhea are considerably improved. For producing continuous vibrations he prefers an ordinary guitar firmly attached to a stand with a movable electric vibrator adjusted to strike any desired string. The range of vibrations are in this, from 80 to 320 per second and can be increased to 1,000 per second by use of frets. The strings he has found most effective, however, are those vibrating 80 to 160 times per second, though this varies considerably in different individuals. As to the volume of sound required in any particular case, he has been unable to determine, unless it be that other things being equal, the greater volume the better the result obtained.

THE PREVENTION OF MASTOID EMPYEMA.

Dr. Charles H. Burnett, in a paper presented at the meeting of the American Otological Society, July 16, 1895 (*Medical News*, August 17, 1895), points out that the proper treatment of an acute otitis media is largely negative, after either spontaneous or artificial opening in the membrana has occurred, and a discharge set in. He advises that all forms of inflation of the tympana should be carefully avoided in this disease, not only for the welfare of the ear already infected with pathogenic germs, but also in order to avoid forcing similar germs into the, as yet, unaffected ear. He does not believe that it is possible to abort an acute otitis media excepting by a paracentesis of the membrana in the early congestive stage. In acute otitis dry heat will never do any harm and may give relief. As soon as the membrana is perforated and a discharge sets in, or even before this takes place, immediately after paracentesis, we should urge the medical attendant to insert simply a strip of iodoform gauze or carbolic acid gauze an inch and a half long by a quarter of an inch wide into the auditory canal for antiseptic drainage purposes, place a tuft of the same gauze in the concha, and let the ear alone for twenty-four hours, when the same kind of dressing may be re-applied if the previous dressings are moist, or let alone for twenty-four hours longer if they are dry. At no time does the author syringe the acutely inflamed ear or put anything into it but the dressing mentioned, and he finds that the middle ear heals rapidly and the perforation closes. We should strenuously diffuse the idea that all insufflations, moppings, syringings and instillations, of anything, will now be irritant to the membrana and middle ear, and tend to bring about secondary infection. In his experience an acute otitis media properly treated is never followed by mastoid involvement, or a continuance of discharge from the ear, but gets well in five or six days.

AN ELECTRIC PRESSURE SOUND FOR THE DIRECT VIBRATION OF THE MEMBRANA TYMPANI.

Dr. John C. Lester, (*New York Med. Jour.*, June 8, 1895). After referring to the papers of Braun,[1] Laker,[2] Freudenthal,[3] Black,[4] and more especially of Lucae,[5] who first employed and devised an instrument for the mechanical treatment of chronic diseases of motion in the conducting apparatus of the acoustic organ, the writer gives the following description of an instru-

FIG. 1.
Motor and pressure sound in position.

ment devised by himself, which has proved more than satisfactory in those cases of impaired hearing and tinnitus, which are directly traceable to some defect in the conducting apparatus of the ear:

[1] *Verhandlungen des 10, Internat. Med. Cong.*, Berlin, 1890.

[2] *Die Heil-Erfolge der inneren Schleimhautmassage*, Graz, 1892.

[3] Internal Massage in Diseases of the Nose and Throat. *Med. Record*, Vol. XLVIII, No. 1.

[4] New Instrument for Vibratory Massage of the Nasal Mucous Membrane, *N. Y. Med. Jour.*, Vol. IX, No. 25.

[5] *Archiv. für Ohrenheilkunde*, Band XXI, 1884.

"In the first illustration (Fig. 1) the instrument is shown in position. As will be seen, the head of the patient is turned slightly toward the opposite side as for an ordinary examination of the middle ear, and firmly fixed in this position. An ordinary round ear speculum is introduced, and the canal illuminated in the usual manner. The motor with pressure sound attached is shown in Fig. 2. The right hand grasps the handle of motor with the thumb resting on the button of the contact spring. The corrugated handle B (Fig. 3) of the pressure sound A (Fig. 3) is firmly held between the thumb and index finger of the left hand. The tip of the little finger is made to rest gently on the head of the patient immediately behind the auricle, and the sound is introduced parallel to the anterior superior wall of the auditory canal until the cylindrical extremity of the spiral end D (Fig. 3) rests upon the base of the short process of the malleus. The short pro-

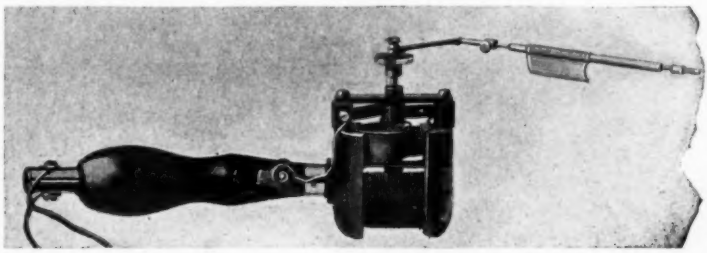


FIG. 2.
Motor with pressure sound attached.

cess of the malleus is selected as the point of contact, as it has been demonstrated by Lucae[6] that 'if the malleus is still movable, more or less free movements are seen at once to take place in the whole drum membrane, which in the majority of cases, correspond to the movements of the short process—*i. e.*, occurring inward on pressure upon the latter, and outward on removal of pressure.'

"When contact is made with the pressure button before referred to, vibration ranging from five hundred to fifteen hundred or more a minute, judging from the note obtained from the revolutions of the armature, are produced. The extent or length of the vibrations is thoroughly controlled by the eccentric throw G (Fig. 3)

[6] *Archiv. für Ohrenheilkunde*, Vol. XXI, p. 84.

and the binding screw H (Fig. 3), the range being from zero to half an inch.

"In the cases so far treated the best results have been obtained by a minimum length or extent of vibrations and a maximum number of vibrations.

"The duration of treatment varies, the average being from three to ten seconds at each sitting, and should be repeated from two to three times a week."

Following the description of the instrument the author presents the histories of several cases treated by direct massage of the drum

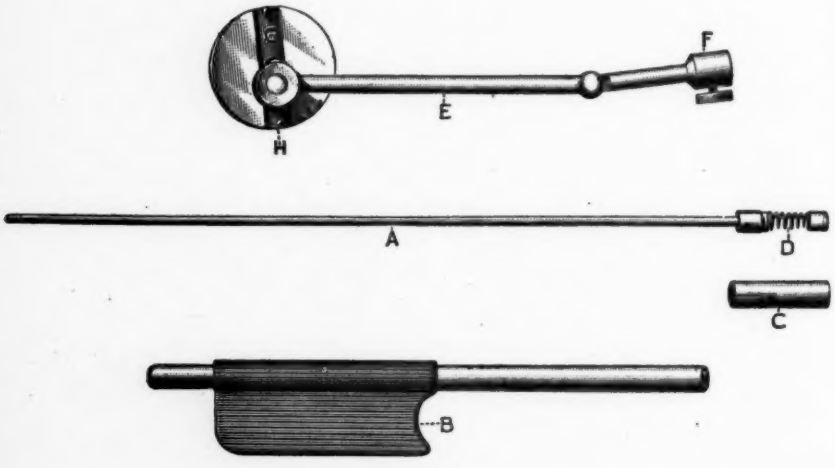


FIG. 3.

G, eccentric throw; H, stud and sleeve with binding screw; E, adjustable connecting rod or shaft; F, receiving socket with binding screw for pressure sound; A, pressure sound and spiral spring (D); C, protecting cap for spring when not in use; B, corrugated handle and tube.

membrane, in which other methods of treatment had been persistently employed with little or no benefit.

From the published cases and others under treatment, the writer feels justified in the following conclusions:

"That in the mechanical mobilization of the ossicles by vibratory massage we have an agent of undoubted value in chronic and subacute affections of the middle ear. That the therapeutic value of this method depends largely on the rapidity and amplitude of the vibrations.

"That it is a safe method of treatment in all cases of impaired function due to some defect in the conducting apparatus. That it is of especial value in sclerosis and in atropic conditions by virtue of its action in increasing the vascularity and hence the nutrition of the part.

"That in hypertrophic otitis mediâ this method is safer and to be preferred to the pñeumatic method of Delstanche, which is unsafe and in many cases positively harmful.

"That it is a method easy of application, causes little or no reaction, and is unattended with pain or discomfort to the patient."

ABSTRACTS FROM CURRENT NEUROLOGICAL LITERATURE.

By Wendell Reber, M. D.,
OF POTTSVILLE, PA.

OCULIST AND AURIST TO THE CHILDREN'S HOME—LATE JUNIOR RESIDENT PHYSICIAN STATE HOSPITAL FOR INSANE, NORRISTOWN, PA.—FORMERLY CLINICAL ASSISTANT WILLS EYE HOSPITAL; ALSO TO THE EYE DEPARTMENTS OF THE PRESBYTERIAN AND ST. AGNES HOSPITALS, PHILADELPHIA, PA.

PROGRESSIVE MUSCULAR ATROPHY INVOLVING IN ITS LATER STAGES THE EXTERNAL OCULAR MUSCLES.

J. T. Rugh and C. K. Mills (Philadelphia) report the case of a married woman, 35 years of age, who, for thirteen years, had been the subject of progressive muscular atrophy. The right shoulder was first affected, and gradually lost its function. Later the muscles of the left half of the face became atrophic. Now, involvement of the ocular muscles is evidently beginning. In looking both outward and inward, the excursion of the left eye is incomplete, and in looking upward it has a tendency to wander outward. Some restriction of movement inward is also observable in the right eye. It is probable that the impairment is of conjugate ocular movement to the left. Pupils respond to light and accommodation. The authors, in concluding, remark that the case probably belongs to the family of progressive muscular degenerations. It is unusual in having begun in the rhomboid and scapular muscles, and in remaining most marked in them, and for the long period of time elapsing between the two attacks of pain due to the atrophic condition. (*Journal Nerv. and Ment. Dis.*, June, 1895.)

THE DIFFERENTIAL DIAGNOSIS OF TRAUMATIC INTRACRANIAL LESIONS.

Dr. Charles Phelps, after an exhaustive and critical consideration of the above subject from a practical point of view, states full conclusions, from which we extract the following:

The pupillary condition in intra-cranial hemorrhages usually suffers some change, but none which is characteristic. Every possible combination of contraction, dilatation and normal condition is associated with every variety and situation of hemorrhage with the single exception that contraction of one pupil never occurs without some changes in its fellow. Dilatation in some combination is more commonly observed than contraction, but not more frequently upon the side of the effusion than upon the opposite side, and not more especially with one type of hemorrhage than with another. In complicated hemorrhages dilatation of both pupils is more common; and the effusion is more frequently bilateral than in some simple cases. In unilateral effusion, dilatation is more likely to be on the corresponding side. A normal condition of the pupils is compatible with every variety of hemorrhage wherever situated, whether simple or complicated. (*New York Med. Jour.*, January 12, 1895.

A CASE OF SUBACUTE NUCLEAR OPHTHALMOPLEGIA WITH PARALYSIS OF THE EXTREMITIES.

Kalischer (in the *Zeitschrift für Nervenheilkunde*, Vol. VI.) records the following case with post-mortem findings:

Male, 64 years of age, of good family and personal history, developed without apparent cause (except possibly sorrow, anxiety and misuse of tobacco), first, a right-sided ophthalmoplegia, with associated diplopia, and soon after a similar condition on the left side. In a few days the external eye muscles became paralytic, while the internal muscles which in the beginning were entirely free became paretic. General disturbances, such as fever, headache, optic neuritis, vomiting, vertigo, stupidity, etc., were entirely absent. The other cranial nerves were unimpaired except for a slight weakness in the internal portion of the right facial. About this time there developed a symmetrical facial paralysis which went on to paralysis of the extremities. After a period of progression all the symptoms became stationary and there was a remission. Especially in the morning and after a rest during the day, the paralysis would be much improved. Four months later death occurred rather suddenly from respiratory paralysis. Autopsy twenty-two hours after death showed no evidence of arterial degeneration at the base of the brain. Microscopical examination disclosed normal optic chiasm, optic nerves and nerves going to supply the ocular muscles. There was no increase in interstitial tissue in the nuclei of the nerves to the external ocular muscles.

[The fact that the optic nerves as far back as the chiasm, and the nerves going to the external ocular muscles were normal, suggests that the origin of the ocular disturbance was some structural changes in the nuclei of the third, fourth and sixth nerves. W. R.]

THE DISTURBANCES OF SENSIBILITY OF THE GLOBE OF THE EYE AND ITS APPENDAGES IN LOCOMOTOR ATAXIA.

Berger (*La. Med. Mod.*, November, 1894) in opening his subject states:

"The disturbances of sensibility of the skin in locomotor ataxia are well known, but those of the visual sphere seem to have escaped the notice of authors up to the present time. In the area of distribution of the trigeminal nerve some diagnostic importance has been attached to anesthesia of the pharynx and periorbital anesthesia of the skin, which latter is found in certain cases of tabic atrophy of the optic nerve."

After comprehensive clinical histories of five cases, he concludes that:

"In locomotor ataxia various troubles may develop in the eye and its appendages. Thus, in the cornea there is a diminution of sensibility; in the conjunctiva there is partial anesthesia to the touch and temperature, also impaired localization. The skin of the lids may show disturbance of localization. The surrounding parts of the eye may also be impaired, there being present periorbital cutaneous anesthesia, also disturbances of the faculty of localization over the forehead, temples, cheek and nose."

He summarizes as follows:

"1. There is no relation between the symptoms above enumerated and atrophy of the optic nerve of tabic origin, there being cases in which the latter is present with no disturbance of sensibility of the eye and its adnexæ. On the other hand these anomolies of sensation may be present in a tabetic with the co-existence of optic atrophy.

"2. The presence of disturbances of sensibility and localization above referred to, if found in a case of optic atrophy point to the tabic origin of the optic nerve degeneration."

INTRA-CRANIAL GUMMA(?) WITH OCULAR SYMPTOMS.

At the May meeting of the New York Neurologic Society, Dr. C. E. Nammack presented an instance of suspected intra-cranial gumma, during the discussion of which, Dr. Sachs and Dr. Starr

spoke of the cautions to be observed in making the diagnosis of gumma. They had seen cases improve vastly on specific treatment that subsequently were proven of an entirely different character. During the same discussion, Dr. J. F. Terriberry remarked that "one could get no idea of the degree of choked disc from the impairment of vision." (*Journal Nerv. and Ment. Dis.*, July, 1895.)

HYSTERICAL AMBLYOPIA AND AMAUROSIS.

Dr. J. Arthur Booth's (Brooklyn) conclusions drawn from five comprehensive case histories of hysterical amblyopia are sufficiently interesting to warrant full quotation:

Ambyopia or amaurosis from hysteria may be slight in form and transitory in duration, or very severe; sometimes tardy in its progress and prolonged in its existence. If the condition should persist for any length of time and an alteration of nutrition or any morbid formative process be set up by prolonged functional disturbance, then it is probable that finally the condition would change into an amaurosis from inflammation and congestion.

The diagnosis is based on two points: The absence of any demonstrable changes in the eye, and the lack of that agreement between the individual symptoms constituting the disturbance of vision, which under other circumstances they would exhibit. In addition to the usual therapy, he urges hypnotism. He remarks, "a great many of us are prone to look upon this entire subject as either belonging to the domain of quackery or believing that it requires some special power, and thus hesitate to take advantage of this method of treatment. The time has now passed for any such argument, and any physician who would take the trouble to study the subject would obtain satisfactory results in a certain number of cases. The manner of procedure in producing hypnosis is given in detail in current literature, so that it does not seem necessary to dwell upon this part of the subject here except to state that the fixation method is the one generally employed."

Conclusions:

1. We possess in suggestive therapeutics an important aid in the treatment of certain morbid conditions, but just how valuable this may be cannot be estimated until it is more generally used and the results reported.

2. The results of this method or treatment are sufficient to stimulate the profession to further use of it.

3. Instead of waiting and trying other methods first, thus allowing the disease to exist for a certain time, I would recommend trial by hypnotism in the first place.

4. The use of hypnotism by the intelligent physician in the cure of certain morbid conditions does not produce any bad effects, notwithstanding reports to the contrary. (*Journal Nerv. and Ment. Dis.*, August, 1895.)

TABES ARRESTED BY BLINDNESS.

Dejerine has been investigating the above subject. He quotes Benedikt, to whom he ascribes the credit of first pointing out the correlation between tabes and optic atrophy; also the fact that in these cases, with and by the appearance of said atrophy, the development of tabes became arrested. Benedikt further asserted that whatever stage the tabes had reached, the motor disturbances characteristic of tabes receded as soon as the disease complicated itself with atrophy of the the optic nerves.

With the latter statement Dejerine cannot agree. According to his experience, the optic atrophy, if it does complicate the disease, sets in at an early stage, viz., before the disturbances of motor incoördination have made their appearance. He thinks that when the motor incoördination is once established the patient can be nearly assured that he will not become blind.

"The optic atrophy is most likely to appear soon after the lancinating, lightning-like pains are felt. With the development of blindness these pains nearly always diminish in intensity and frequency to disappear entirely in some cases.

"In a few cases the lancinating pains and the amblyopia are contemporaneous. In a third class, only the blindness is present. In these cases we probably have to deal with tabetics in whom the the tabic process has involved only the eyes. The fact that in some such cases lancinating pains set in years afterward (Gowers), with later pathologic findings demonstrating lesions of initial tabes, proves clearly that we have before us a special clinical form of tabes."

In conclusion he records the peculiar fact that sometimes the knee jerks after having been absent for years, appear again when blindness occurs. (*Gaz. degli aspetali e delle Cliniche*, 1895, No. 46.)

THE COMPARATIVE PATHOLOGY OF THE NEGRO IN DISEASES OF THE NOSE, THROAT AND EAR, FROM AN ANALYSIS OF 11,855 CASES.*

By W. Scheppegrell, A. M., M. D.,
OF NEW ORLEANS, LA.

ASSISTANT SURGEON EYE, EAR, NOSE AND THROAT HOSPITAL, NEW ORLEANS.

THE comparative immunity of the negro from many of the diseases of the nose, throat and ear has impressed me for a number of years. This fact, of which I have been cognizant in a general way from the examination of a very large number of cases, has been emphasized by a careful analysis which I have made of a series of 11,855 cases which were examined in the throat department of the Eye, Ear, Nose and Throat Hospital of this city from January 1, 1892, to April 20, 1895.

The Eye, Ear, Nose and Throat Hospital offers unusual facilities for the study of the comparative pathology of the negro in diseases of the nose, throat and ear. Being the largest special hospital in the world that is located in a section where the negroes are sufficiently numerous to offer a fair comparison, the study of these cases will offer a great deal of interest.

The population of New Orleans, according to the last United States census (1890), consists of 177,376 whites and 64,663 colored. While this shows the white population to be almost three times as great as the colored, still this is offset by the fact that the colored population, as far as diseases of the nose, throat and ear is concerned, are very extensive patrons of free clinics. Among the whites, in spite of the fact that free hospital privileges are excessively abused here as in other

* Read August 11, 1895, before the Orleans Parish Medical Society.

cities, still probably not more than 25% are subjects who take advantage of free clinics, while with the negro, this contingent is over 70%.

This estimate makes the number of those who would visit a free clinic, if suffering from the ear, nose or throat, 44,344 and 44,264 for white and colored respectively, or approximately equal for both.[1]

One point to which I would call attention is that when the word *negro* is mentioned in this paper, this term is not restricted to the pure African type, but as opposed to the term white, and known commonly as "colored."

The following tables, which I have collected, shows the number of cases of the diseases designated in 11,855 cases, the first column being the number of whites affected, the second of colored, and the third column the number of negroes affected to 100 whites:

A superficial examination of these tables demonstrates the much larger proportion of whites than negroes as regards the diseases of the nose, throat and ear. This is especially noticeable in the so-called "post-nasal catarrh."

This affection, which is so common in America that it has been estimated that almost every other person is affected with it to some extent, a fact so well known that European writers often refer to it as the "American catarrh"—this affection is present in the negroes only 12 times to 100 in the whites. This fact has impressed itself on every one who has much experience in the free clinics of this city where throat diseases are treated.

In chronic suppurative and non-suppurative inflammations of the middle ear, the ratio of the negro is also small, being 16 and 26 respectively to 100 cases in the whites

In the diseases of the nose, we also find a proportionately small number of negroes affected, and in this fact, in my opinion, lies the secret of the comparative immunity of the negro from diseases of the ear and throat. Laryngologists and aurists are almost unanimous in attributing the greater number of cases

[1] The hospital is also attended by numbers of patients from the adjoining country; but as the proportion of white and colored in these is about the same as in the city, this will not affect the ratio here stated.

GENERAL TABLE.

	Whites	Negroes	Number Negroes to 100 Whites
Diseases of the mouth and tongue	388	156	42
Diseases of the fauces, pharynx	2,717	747	27
Diseases of the larynx and trachea	347	108	31
Diseases of the œsophagus	35	4	11
Diseases of the neck	128	109	85
Diseases of the nose and accessory cavities	2,483	571	23
Diseases of the ear	3,029	788	26
Miscellaneous diseases presenting symptoms in ear, nose and throat	167	78	47

SPECIAL TABLÆ.

	Whites	Negroes	Number Negroes to 100 Whites
Epithelioma of mouth, throat and nose	16	11	69
Tubercular laryngitis	95	34	35
Luetic affections of the mouth, nose, throat	15	4	27
Hypertrophy of faucial tonsils	635	119	18
Hypertrophy of pharyngeal tonsils	982	219	22
Hypertrophy of lingual tonsils	234	64	27
Elongated uvula	56	43	76
Rhinitis, hypertrophica and intumescens	806	204	25
Rhinitis, atrophica fetida	126	41	32
Rhinitis, atrophica simplex	225	55	24
Rhinitis diphtheretica	6	0	0
Deformed septum	568	57	10
Perforating ulcer of septum	13	2	15
Nasal polypi (myxomata)	63	10	16
Rhino-pharyngitis chron (post-nasal catarrh)	322	40	12
Lymphadenitis cervicalis	88	80	91
Bronchocele (goitre)	31	39	126
Basedow's disease (exophthalmic goitre)	5	4	80
Chronic non-suppurative otitis media	914	245	26
Chronic suppurative otitis media	663	108	16
Acute catarrhal otitis media	69	39	56
Acute otitis externa	179	37	21
Impacted wax	447	107	24
Mastoiditis	12	3	25
Deaf-mutism	16	1	6
Keloid tumor of lobe of ear	1	7	700
Diphtheria	6	8	133

of diseases of the throat and ear to some morbid condition in the nose, which inhibits the functional activity of this organ. In the whites, especially where exposed to the dust and other impurities of the air in large cities, and also to the sudden changes so frequent in our section, some congested or hypertrophied condition of the nasal mucosa is very common. The nasal septum also is so often found deformed in some manner in the white patient, that a perfect septum forms the exception. These conditions are frequent causes of diseased conditions in the ear and throat.

The broad patulous nostrils of the negro, however, appear to offer a certain protection against these atmospheric irritations, and congested and hypertrophic conditions in the nose are much less frequent (25 to 100 whites), while the septum in the majority of cases is normal (10 deformities to 100 in whites). The healthier nose of the negro explains the lesser frequency of pathological conditions in the ear and throat of this race.

Goitre is more prevalent in this city than is generally accepted, 70 cases being here noted. Of these 31 were white and 39 colored.

The larger proportion of impacted wax in the white than in the negro (100 to 24) is explained by the fact that the auricular canal of the negro is usually much larger and straighter than in the white, rendering an accumulation of wax in sufficient abundance to form an impaction more difficult.

An interesting point here shown is the much larger proportion of deaf-mutism in the white, 16 of the 17 cases noted being white. I am not quite certain whether this is due to a special immunity in the negro, or the fact that meningitis in infants, which is so often the cause of this lamentable condition, and other diseases which destroy the hearing in children, are more often recovered from by white children through more careful attention, and who therefore exhibit a larger proportion of this otic sequala.

In primary diphtheria of the nose I note six cases among the whites and none among the negroes. As diphtheria of the throat is shown to be more frequent, in this clinic, in the negro, I cannot suppose it due to the fact that he is exempt, but rather to the circumstance that, as the general symptoms

of primary diphtheritic rhinitis are generally light, the white parent would bring the child to the hospital on account of the obstructed and discharging nostril, to which the negro mother would pay but little attention. The principle here involved might also explain the apparent smallness in the number of certain diseases which we know to be as common, or even more so, in the negro, as for instance lymphadenitis of the neck (87 to 100).

In keloid tumors of the lobule of the ear, we find it seven times more frequent in the negro than in the white. It is found at the site of the pierced lobule, and frequently affects both sides. Turnbull, in his work on the ear, states that it is more commonly found in the mulatto, and that it is due to the scrofulous tendency of this mixed race. This is, however, not my experience, as of the 14 cases which I have seen, 2 were white, 10 were negroes and only 2 mulattoes.

3723 Prytania street.

REPORT OF A CASE OF DOUBLE PEDICULATED MYXO-FIBROMA.

By C. W. Richardson, M. D.,
OF WASHINGTON, D. C.

PROFESSOR OF LARYNGOLOGY AND OTOLOGY, COLUMBIAN UNIVERSITY, WASHINGTON, D. C.

ON June 24, 1893, Dr. Samuel Bogan brought to me for operation a young man having a large growth in his pharynx. The patient was 30 years of age, badly nourished, nervous and anemic. He was a carpenter by occupation. Patient stated that he had noticed the presence of something foreign in his throat for more than a year. He was conscious of the growth, by sight and digital exploration, for about six months. The voice was thick and muffled, many of his spoken words being exceedingly difficult to understand. Nasal breathing was entirely arrested. His brother stated that snoring at night was intense, and this noise, with other sounds made, kept all within hearing distance in a constant state of agitation. There had never been any hemorrhage either from the nasal or pharyngeal cavities. There was no interference with deglutition. On inspection of pharynx a large reddish gray mass was seen protruding from naso-pharyngeal cavity along the inferior border of the soft palate and uvula. The growth extended along the full length of the soft palate from right to left and filled out the space bounded by the soft palate anteriorly and the pharyngeal wall posteriorly. In order to ascertain the point of attachment and determine the extent, size, consistency and nature of the growth I passed my index finger behind the mass into the naso-pharynx. I was very much surprised to find instead of one attachment that the growth had two points of insertion, or two distinct pedicles. One of these pedicles, which was slender, had its attachment to the right lateral wall of pharynx, just above, and anterior to the mouth of the right

Eustachian tube; the other pedicle, firmer and harder, had its attachment to the vault of the pharynx just posterior to the left choanæ. The naval cavities were quite patulous and presented no deviation from the normal.

From the appearance, soft consistency and freedom from hemorrhage, previous to and during manipulation, I suspected the growth to be a myxo-fibroma. The removal of the growth was easily and rapidly accomplished. Introducing the index finger into the pharynx, it was passed around the more slender of the two attachments which was freed from its insertion to the pharynx.

FIG. 1.
Anterior view.

The right half of the growth then fell into the oral pharynx and sagged to the left. A snare was now threaded over the whole mass and carried up into the naso-pharynx, when the whole growth was evulsed. There was very little hemorrhage attending the removal and this quickly subsided. The growth in gross appearance at time of removal was as follows, viz.: its color was pinkish to the right, deepening into a deep red towards the left mass. It was multi-lobular; the right mass being composed of two imperfectly defined lobes, the left of a single lobe, the three

being joined at the common center. The right half had more the appearance and consistency of a true myxoma, the left more that of a true fibroma. The illustrations show the mass.

From the anterior view it will he seen that the lobulated condition of the mass is hardly discernible; a slight contraction above and below giving only a slight idea of the condition as seen by a posterior view. From this view the two pedicles, their points of attachment to the mass, the small growth attached to the slender pedicle, and the outline of the two pedicles are better seen. In

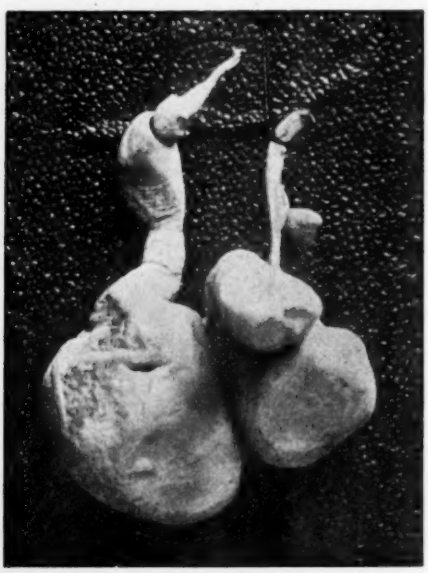


FIG 2.
Posterior view.

the posterior view (Fig. 2) the lobulated condition of the mass is beautifully illustrated. The deep sulcus separating the right and left mass is more deeply marked, by shading, than actually exists in the growth. The bi-lobulated condition of the right mass is, on the contrary, on account of the overlapping of the upper lobe, not so clearly demonstrated as exists in the original. The illustrations were photographed three days after immersion in alcohol and represents its normal size at the time the pictures were made. Pathologic sections of the growth show a predominence of fibrous over myxomatous tissue.

The larger of the two masses was composed almost entirely of fibrous tissue, while the smaller right mass showed a mixed condition, although even in this, the fibrous element predominated at base of growth. The occurrence of large growths in the pharyngeal cavity is decidedly uncommon, I have removed several nearly as large as the one here illustrated and a number of nasal myxomatous growths projecting into post-nasal cavity, but never one presenting such unique features as the growth mentioned above. I regret to report that I neglected to have the growth weighed. I fail to find record of a single instance of a growth removed from the pharyngeal cavity having two distinct and well-marked pedicles. There are probably two ways in which a growth of this character could become possessed of two separate and distinct pedicles:

1. The growth may have started from vault of pharynx, extending along its whole length from right to left, with a web-like attachment which, as the growth increased in size and weight, caused the central part of the web to become attenuated and gradually absorbed, leaving the extreme points of attachment, thus forming the two distinct pedicles.

2. There may have been originally two separate and distinct masses which, as they grew, from inflammatory action or pressure, became attached along their surfaces of contact. Sections were made through the center of this mass from right to left, to determine if there were any histologic evidences of fusion. There was no point under examination but that most positively negatived such a conclusion. The growth throughout, so far as possible to discern by the microscope, was a growth with two pedicles.

The interesting features about this growth are:

1. Its double pediculated condition.
2. Its lobulated condition.
3. Its enormous size.

The specimen is now the property of the Army Medical Museum, and is numbered 10,863, pathological section.

1102 L street.

THE ADVOCATION OF A NEW METHOD OF OPERATION FOR MARKED DIFFUSE CARTILAGINOUS DEFLECTION OF THE NASAL SEPTUM.*

By Seymour Oppenheimer, M. D.,
of New York.

THE subject of septum deviation is such an important one that I could not do it justice in the few moments allotted me for its resumé and discussion, and particularly as it is more or less a specialistic topic, it might be somewhat out of place at a meeting of this kind. I will therefore confine myself very briefly to those points, directly advancing the method of operation under discussion.

During the past few years, innumerable orthopedic and operative methods for the correction of cartilaginous deviations of the septum of a high degree have been advocated by various operators and authors. The general results of these various methods have been, as far as I learn, far from satisfactory.

In the last year I have operated upon six cases of marked deflection, all due to trauma, in which the greatest portion of the cartilaginous septum was involved. In one I endeavored to correct the deformity by gradual dilatation with bougies, but after several months of perseverance without accomplishing much, the patient became discouraged and passed from under my observation. In three other cases I refractured the septum, and by means of splints held it in position. The immediate results appeared to be very satisfactory, but upon seeing the patients, some eight months subsequent to the operation, I

* Read at the eleventh annual meeting of the Fifth District Branch of the New York State Medical Association, Brooklyn, May 28, 1895.

found that there was a decided tendency for the deformity to return. In the remaining two cases I made a crucial incision, followed by forcible correction of the deflection, and although this procedure did not accomplish all that might be desired, much improvement was derived.

Recently, while in Vienna, I had the opportunity of observing eleven cases of septal deformity operated upon by a method proposed by Dr. Hajek. The results were very encouraging. In all the cases, nasal respiration was established and no external deformity occurred.

During the fall of 1892 and spring of 1893 fourteen cases had been operated upon. In none of these cases had there been any return of the nasal deflection up to the time of examination, December, 1894.

Upon March 24, 1895, A. H., 38 years of age, consulted me, giving the following history: One year previously she was struck upon the nose very forcibly by a baseball. Her physician ordered cold applications and lead and opium solution, under the influence of which the inflammation rapidly subsided, and, excepting for the discomfort of obstructed nasal breathing, she felt comparatively well. For the following six months she had repeated attacks of rhinitis, accompanied with profuse secretion. Consulting a specialist, he made six distinct applications of the galvano-cautery to the right inferior turbinated body at various sittings. His opinion, and also that of a consultant, as to the amount of benefit to be derived from operative interference upon the deflected septum was so dubious, that she decided to postpone it until some future time. Following the cauterization, the nose, which formerly secreted so profusely, assumed a dry condition, with a gradual increasing amount of scab formation, which gave rise to a very disagreeable odor. For this she was again treated, and by the regular use of the spray the nose is kept in a fairly clean state. Upon examination, I find upon the right side an enormous concavity with a marked atrophic condition of the turbinated bodies. Upon the left, the septum is pushed so much laterally that it impinges upon the turbinated bodies, having caused a degeneration of their structure. The entrance of air into this side is practically impossible.

A similar condition of atrophic degeneration was present in the post-nasal space and upon the posterior pharyngeal wall. The patient requesting that something be done for the relief of the nasal obstruction which was developing most unpleasant symptoms, par-

EMORY UNIVERSITY
THE A. W. CALHOUN MEDICAL LIBRARY

ticularly those referable to aural disturbance, I decided to interfere operatively, but being particularly cautious to inform the patient that I could not forsay the amount of good to be derived.

Upon the following day I operated upon her, the various steps in the procedure being as follows: The nose was disinfected with a spray of a weak creolin solution, also saturating several pieces of cotton with it, which were allowed to remain in position for several minutes. After their removal the posterior nares were plugged, so that there would be no possibility of the blood flowing back into the pharynx during the operation; the patient's attempts at expectoration would have retarded the progress of the operation considerably. Pledgets of cotton saturated with a 10% solution of cocain were then introduced into both nostrils, pressing them firmly against the septum. After ten minutes they were removed, and the parts were found to be thoroughly anesthetized.

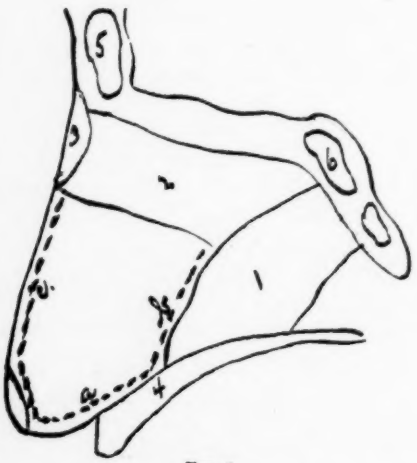


FIG. 1.

Segittal section of the nose (diagrammatic). A, B, C, lines of incision: 1, vomer; 2, ethmoidal plate; 3, nasal bone: 4, superior maxillary bone; 5, frontal sinus; 6, sphenoidal cells.

An incision (*a*) was then made with a slender sharp-pointed knife through the antero-inferior border of the cartilaginous septum (through its extire thickness). The incision was continued horizontally backwards and slightly upwards, with a blunt knife, along the juncture of the lower cartilaginous septal border with the spina nasalis of the superior maxilla as far back as the articulation of the vomer.

A right-angular knife was then substituted for the straight one, and the incision prolonged upwards and slightly forwards for about 1½ *cm.* (*b*). Then the incision is made from the starting point of the first incision, *i. e.*, antero-inferior septal border, and carried upwards parallel with the external contour of the nose until the lower edge of the ethmoidal plate is reached (*c*).

These three incisions having been made, the cartilaginous portion of the septum is now converted into a movable fragment, attached only at the upper part.

By using a little pressure the septum can now be dislocated from the convex to the concave side, and held in its new position by some form of splint. The tampons in the posterior nares now being removed, the operation is complete.

Hajek[1] made use of iodoform gauze tampons, which I have replaced by splints, as reccommended by Berens.[2]

Little pain was experienced by the patient and the hemorrhage, although considerable, stopped of its own accord. The splints were left undisturbed for one week, when they were removed and the nares thoroughly cleansed and the splints re-introduced, being allowed to remain in position one week longer, after which they were discarded.

On April 12, three weeks after operation, the wounds had entirely healed. There was some obstruction due to redundant tissue, occupying the inferior meatus. This was removed by means of the saw. The patient could then breathe freely through the nostril, and the symptoms of aural disturbance, *i. e.*, pain, tinnitus, deafness, which previously existed, have entirely disappeared. The knives used for the operation were made after the models of Prof. Jurasz,[3] of Heidelberg, their original intention being for resection of the septum.

---

[1] Hajek, *International Klinische Rundschau*, No. 38.

[2] *Manhattan Eye and Ear Hospital Reports*, 1894.

[3] *Die Krankheiten der oberen Luftwege*, page 70.

55 East Sixty-fifth street.

TRANSLATIONS FROM CURRENT FOREIGN LARYNGOLOGICAL LITERATURE. (ABRIDGED.)

By J. W. Gleitsmann,
of New York.

AUTOSCOPY OF THE AIR PASSAGES (INSPECTION WITHOUT LARYNGEAL MIRROR).

Dr. Alfred Kirstein (*Therapeutische Monathefte*, July, 1895).

This paper is the last one of the series of publications upon the same subject. The other papers have been as follows:

1. *Laryngoscopia directa und Tracheoscopia directa* (*inspection of the larynx and trachea without mirror*). Preliminary communication (*Allg. Med. Central Zeitung*, 1895, No. 34).

2. *Autoscopy of the Larynx and Trachea with demonstrations.* Paper read before the Laryngological Society of Berlin, May 15, 1895 (*Berl. Klin. Wochenschrift*, 1895, No. 22).

3. *Autoscopy of the Larynx and Trachea with demonstrations.* Paper read before the Laryngological Society of Berlin, May 24, 1895 (*Archiv. für Laryngologie und Rhinologie*, Vol. III, No. 1 and 2).

4. *Autoscopy of the Larynx and Trachea.* Meeting of the South German Laryngologists at Heidelberg, June 4, 1895.

5. *Progress in the examination of the Pharynx and Larynx without mirror* (*Autoscopy*). Preliminary communication (*Allg. Med. Central Zeitung*, 1895, No. 44).

6. *My improved method of Autoscopy of the Air Passages.* (*Allg. Med. Central Zeitung*, 1895, No. 51).

Kirstein in his last publication describes at length his improved method of autoscopy, namely: The direct inspection of the larynx and trachea without the aid of the laryngeal mirror. When we compare this present method with previous procedures, a considerable progress in the construction and application of the instrument is obvious.

The instrument called autoscope consists of a straight, slightly concave metal plate about five inches long and one inch wide, resembling somewhat a straight tongue depressor. At the end near the handle a rectangular sliding plate is to be attached leaving sufficient space between the two plates for inspection and introduction of the instrument if so desired. The distal end is round, slightly concave, and thickened to prevent injury to the part coming in contact with the instrument.

After the sliding plate has been attached to the horizontal one the latter is inserted into the opening of the handle bearing an electric lamp (Casper), and when connection with a battery has

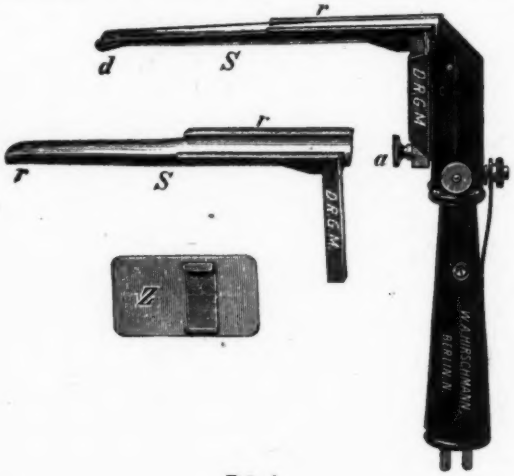


FIG. 1.

been made the autoscope is ready for use. The latest improved set furnished by Kirschmann, of Berlin, also contains a metal handle which is to be utilized for the forehead reflector; it is used with gas or preferably with electric light.

According to the position of the autoscope we distinguish three different periods of the examination.

For the first position (pharyngoscopy) the physician stands in front of the patient, who is sitting upright on a chair, and introduces the illuminated autoscope into the mouth in the same manner as in applying the ordinary tongue depressor. When the tongue has been depressed the usual picture of the pharynx is seen.

For the second position (autoscopy of the lower portion of the pharynx) the instrument is pushed farther back, the handle elevated

whilst the tongue is steadily depressed. We may now see the whole anterior surface of the epiglottis, both valleculæ, the entire posterior and lateral portion of the pharynx, and occasionally the arytenoid cartilages and the sinus pyriformis.

For the third position (autoscopy of the larynx and trachea) the handle is still more elevated till the rectangular plate approaches or comes in contact with the upper teeth. Pressure against the teeth should be avoided, and under no circumstances ought the

FIG. 2.

teeth to be used as leverage. The base of the tongue is pushed downwards and forwards and pressure exerted with the autoscope against the glosso-epiglottic ligament to raise the epiglottis. One may then inspect the entire surface of the posterior pharyngeal wall, the pyriform sinuses, the arytenoid cartilages, Santorini's cartilages, the ary-epiglottic folds, the posterior surface of the epiglottis, the ventricular bands and the vocal cords.

In order to examine the trachea, the patient must lean forward, to bring the axis of the trachea into line with the axis of the buccal

cavity. Besides the pharynx and larynx, the whole trachea, with the bifurcation and the beginning of the bronchi can then be seen.

While changing from the first to the third position, all jerking movements must be avoided. The whole examination requires only a few seconds, and Kirstein claims that it is to many patients less disagreeable than the introduction of the laryngeal mirror.

If the patient is too irritable at the first insertion of the autoscope, the examination ought not to be carried on by force, but careful attempts must be made to accustom the patient to the instrument. Should it be impossible to do so, the irritability can be alleviated by the use of cocain. Another obstacle to this method may be the fact that the epiglottis cannot always be sufficiently elevated by the pressure of the autoscope upon the base of the tongue. In such cases cocain must be used, and the autoscope placed behind the epiglottis. For this purpose horizontal plates with a flat smooth end have been constructed.

The writer had occasion at a recent visit to Berlin to witness the examination of patients made by Dr. Kirstein. While it cannot be denied that the examination is accompanied by a disagreeable feeling—especially to the writer himself when his own larynx was examined—it must be said that the image of the part is as beautiful as it is surprising, and when examination is successful, all the parts described above can be seen to the fullest extent.

ABSTRACTS FROM CURRENT RHINOLOGICAL AND LARYNGOLOGICAL LITERATURE.

By M. D. Lederman, M. D.,
of New York.

PHYSIOLOGY AND ANATOMY OF THE NOSE.

Dr. G. Scheff (*Inter-Colonial Quarterly Journal of Med. and Surg.*, Vol. II, No. 1). The author bases his conclusions from experiments carried out upon the cadaver and casts representing the internal structure of the nose. He states that the greater part of the current of air finds its way through the middle meatus; that the old division into respiratory and olfactory regions, is not physiologically correct. In normal respiration, perception of smell takes place. The act of sneezing can have some action upon the contents of the accessory cavities. The middle meatus is the only wide and unobstructed passage for the current of air.

RECURRENT NASAL FIBROMA.

Dr. Price Brown, Toronto (*The Canadian Practitioner*, Vol. XX, No. 8). This growth presented itself in a male, 22 years of age. At the recorder's first examination it was found about an inch and a quarter from the anterior nares, right side, filling the passage, springing from the septum, the vault above, and the middle turbinated body. The attachment on the septal side extended down to the floor of the inferior meatus. The patient was a hemophilia. He had been operated upon a number of times before reaching the author. The previous operator had diagnosed the condition as sarcoma. Under cocain (20% solution), Dr. B. attempted to remove the tumor by means of the galvano-cautery knife, through the anterior nares. Incisions were made on both sides of the growth (septal and external borders), but the hemorrhage was quite severe, and tampons had to be employed to stop

the bleeding. One of the incisions, through the central portion of the mass, laid bare an artery, which seemed to run across between the septum and the external wall. Anterior packing controlled the hemorrhage for a time, but it reappeared, and posterior plugging with sponges soaked in a combination of tannic and sulphuric acid, was effective. The patient was pulseless for a time, but after a week in bed, and two more weeks' rest, the treatment was continued. Electrolysis was then tried, in the hope of limiting the severity of future hemorrhages. After this treatment, the cautery was applied at sixteen different sittings without causing annoying bleeding. The growth extended backwards to the anterior margin of the Eustachian tube; and forced the soft palate downwards. The posterior portion was the most difficult to get at. Daily cleansing with alkaline sprays, followed immediately by the removal of the crusts, and applications of albolene was the supplementary treatment. The patient made a good recovery. Two microscopical examinations showed the growth to be a dense, close-grained fibroma.

MULTIPLE BENIGN PAPILLOMATA OF THE BUCCAL MUCOUS MEMBRANE.

Rasch, of Copenhagen (*Edenburgh Medical Journal*, August, 1895), reports two cases, where a number of grayish-red, warty or condylomatous growths were found on the inner side of the lower lips and cheeks, varying in size from a linseed to a lentil. The larger bled easily when touched or during mastication. Applications of Paquelins' thermo-cautery cured the disease. In one of the cases, the child was in the habit of sucking her thumb, on which she had an old-standing wart. In instances of papilliomatous growths of a simple kind, of the nose, epiglottis, and larynx, the author suggests that the hands of the infants and nurses should always be inspected.

TUBERCULOSIS OF THE UPPER AIR PASSAGES.

Dr. Jonathan Wright, Brooklyn (*New York Medical Journal*, Vol. LXII, No. 12). In discussing the etiology of this disease, the author expresses the opinion that the three "postulates of Koch" have been discarded. To us, as clinicians, tuberculosis means the tubercle, the tubercle bacillus, "plus the vital energy of the bacillus on the one hand and that of the resisting human organism on the other." He thinks that there is some special local resisting

power existing in the nose and throat, which prevents the bacillus from entering the system. Furthermore, that there exists a special local annihilating influence upon the bacillus after it has gained an entrance into the mucous membrane. If such were not the case, primary pharyngeal and laryngeal tuberculosis would be a frequent manifestation. Thost claims that the bacillus frequently enters by way of the glands, in whose epithelium the tubercle frequently develops. Other observers, however, deny this statement. [That some local protecting agency exists seems rational, for authorities have cultivated the bacillus from healty mucous membranes, and were this resisting power absent, the individual would, no doubt, become a tubercular subject. M. D. L.]

In a drawing of a section of an infant's larynx, the author demonstrated that the columnar epithelial structure did not snugly fit the cartilaginous framework of the larynx. There was loose areolar tissue beneath, which permitted extensive movements of the lining membrane, without causing a break in the continuity of the epithelial layer. This, he claimed, was a provision of nature to prevent the entrance of micro-organisms.

EXPERIENCES WITH PAQUIN'S ANTI-TUBERCLE SERUM IN THE TREATMENT OF LARYNGEAL TUBERCULOSIS.

Dr. H. W. Loeb, St. Louis (*New York Medical Journal*, Vol. XLII, No. 14). After observing decided results from the use of this serum in cases of pulmonary disease; the author administered same in nine cases of laryngeal disease. He records the detailed histories of these cases. In one of the cases mentioned, the patient, a male, 34 years of age, refused any local treatment, but permitted the injection of the serum. This case improved considerably. His condition before the treatment was serious. Both lungs were markedly affected, together with pronounced laryngeal involvement. A dubious prognosis was given, and patient was started with one cubic centimeter of the serum daily. The dose was gradually increased until four cubic centimeters were given subcutaneously. No other medicine had been employed in this instance. After a time, the laryngeal lesions improved, and the lungs cleared up considerably. As the serum was the sole agent applied in this individual case, the author is inclined to believe that it has shown a decided beneficial action.

All the other cases reported had pulmonary tuberculosis, complicated by laryngeal disease. In some of them local treatment

was added to the serum injections. These unselected cases exhibited a more favorable course under this treatment than under any other previously tried.

AN EXTREME CASE OF ANGINA LUDOVICI ARISING FROM AN INFLAMED TOOTH.

Dr. E. P. Hughes, Sheffield (*The Journal of Laryn., Rhin. et Otol.*, Vol. IX, No. 7). The infection originated from a diseased tooth in a male patient, 31 years of age. Toothache had existed for ten days. On examination the front of the neck was swollen, hard and brawny, not pitting on pressure. He was unable to swallow or speak above a whisper. The swelling extended from the angle of the jaw downwards and forwards to the third costal cartilage; the jaw was fixed, and the tongue forced into the roof of the mouth. An incision was made in the median line from the symphisis to the lower border of larynx; no pus was found. During the surgical interference symptoms of collapse appeared, and though tracheotomy was performed and artificial respiration applied, the patient was not revived.

TRIGEMINAL NEURALGIA AND NASAL DISEASE.

Dr. Mayo Collier (*The Lancet*, 1895, Vol. II, No. 3757). Two cases of severe and persistent facial neuralgia which had resisted all treatment are reported cured by removal of diseased middle turbinated tissue. In one case the neuralgia had existed four years, and in the other the troublesome symptoms had been present off and on for twelve years. The neurotic disorder was evidently due to some irritation affecting the nasal ganglion on the second division of the fifth nerve.

THE ETIOLOGY OF NERVOUS POLYPI OF THE NOSE.

(*British Medical Journal*, 1895, No. 1808). In a discussion before the Laryngological Section of the British Medical Association held at London, July, 1895, upon the causation of nasal polypi, Dr. Luc, of Paris, stated that he could not accept the necrosing ethmoiditis theory, of Woakes. He had operated upon cases from polypi, with portions of the middle turbinated, had been removed, and the latter had been carefully examined microscopically without revealing the slightest sign of inflammation of the bone. At this meeting he showed microscopical specimens of

the disease under discussion in which no pathological modification of the bony structure could be observed. With such evidence he claims that myxomatous degeneration may be completely independent of any lesion in its neighborhood. It may, however, be the result of repeated or protracted nasal catarrhs, though such a pathogenic relation cannot always be ascertained. Myxomatous degeneration, he is inclined to believe, is most frequently associated with chronic suppuration of the accessory sinuses, or of the nasal fossæ themselves. In some instances malignant diseases of the nose plays a pathogenic rolê.

Professor Dr. Zuckerkundl, of Vienna, in discussing the subject arrived at the conclusion that Woakes' theory is incorrect and untenable. He stated that the hypertrophy of the bone which is sometimes found at the base of the polypi is due to the inflammatory condition of the mucous membrane, whose deeper layers take the place of the periosteum. When the superficial layers become congested and hypertrophic, the deeper, periosteal layers may also become affected and thus cause hypertrophy of the bone.

Dr. P. McBride, of Edinburgh, reasoned that gravity is an important factor in the production of polypi, and that in a certain proportion of cases, inflammatory changes alone may be the starting point of the disease. He claims that pendulos polypi are rarely seen arising from the inferior turbinated body, while on the other hand, papillary growths are more frequently seen in this vicinity. He thinks that the statement of Grüenwald and others as to accessory sinus disease being the principal causative factor in this affection is too sweeping, and must be accepted with caution.

PROFESSIONAL NEWS.

Dr. Will Walter, of Marquette, Mich., is recuperating at Oceanside, San Diego County, California, and preparing to put in a lemon grove.

Dr. J. E. Bradbury has removed from Rockland, Mass., to Taunton, Mass.

Dr. Lester E. Schoch has removed from Shamokin, Pa., to Reading, Pa.

Dr. Thos. F. Rumbold, whose original work in Rhinology has made his name familiar on both sides of the Atlantic, has returned from San Francisco to his old home in St. Louis much improved in health.

At the twenty-seventh annual meeting of the Minnesota State Medical Society, which convened in the city of Duluth, June 20, 1895, Dr. Frank Allport, of Minneapolis, was elected president of the society for the ensuing year by a unanimous vote.

The Eye and Ear Hospital of Pittsburgh, Pa., opened its doors to patients the first day of last July. Drs. Jos. E. Willetts and C. A. Wishart are the ophthalmic surgeons in charge. Dr. E. W. Day is the aural surgeon, and Dr. E. G. Matson is the histologist.

It is not uncommon to receive letters from physicians stating that they "subscribed for the ANNALS OF OPHTHALMOLOGY AND OTOLOGY through an agent months ago and have not received a single copy," and when the matter is looked up it is found that the subscription has never been received. The latest communication of the kind comes from Dr. W. H. Snyder, of Toledo, Ohio. The doctor subscribed through one H. H. Grady, agent for "The Consolidated Book Co.," 133 Vanderwater Street, New York City. Dr. Snyder sent to the editor of the ANNALS the signed

contract that he received from the agent (H. H. Grady) of "The Consolidated Book Co.," and it appears worthy of notice as other physicians are likely to be visited by the agent, and it has been found that "The Consolidated Book Co." is unknown in New York. Vanderwater Street is a very short street on which the numbers run from 1 to 42 only, and there can be no such a number, as given, on the street, and no such a concern as "The Consolidated Book Co." is listed in any of the New York City directories. The handsomely printed blanks, cards and letter heads of such concerns catch the eye, but it is to be hoped that no other physicians will be caught. Arrangements have been made to "surprise" the readers of the ANNALS, next year, by producing a $10-publication for the subscription price of $5, and all subscribers will get the best results by sending $5, Postoffice Money Order, direct to

JAS. P. PARKER, M. D.
701 Olive Street,
ST. LOUIS, MO.

FOR SALE OR EXCHANGE.

Dr. Wendell Reber, of Pottsville, Pa., has volumes X, XI and XII of the *Archives of Otology* (bound), and volumes XIII to XIX, inclusive (unbound), which he would be willing to sell or exchange for the following volumes of *Archives of Ophthalmology*, I to X inclusive, and XX, XXI and XXII.

INDEX TO VOLUME IV.

A CASE of acute purulent inflammation of middle ear with two attacks of double optic neuritis, no mastoid complication, frequent delirium, two operations and recovery, 57.

A case of cerebral clot; loss of vision following injury; trephining; recovery, 42.

A case of chalkosis retinæ (Goldzieher), 172.

A case of circumscribed gummatous ulcerative tumor of the larynx, 436.

A case of fibroma of the nasal fossa, 220.

A case of gunshot injury involving both eyes, studied nine years after the accident, 350.

A case illustrating the relation between the muscular balance of the eyes and their refractive condition, 326.

A case of membrana pupillaris perseverans in both eyes in an adult, 353.

A case of retention of a metallic splinter in a blind eye for seventeen years without the occurrence of sympathetic inflammation, 353.

A case of sympathetic ophthalmia from iridectomy, 476.

A cicatrix of the membrana tympani, vibrating synchronously with the respiration and the pulse, 531.

Acute purulent inflammation of middle ear, 57.

A few modifications in the operating process of adenoid tumors, 222.

Alderton, H. A., Translations from foreign current otological literature, 77, 395, 551.

Abscess of the maxillo-pharyngeal space; ulceration of the internal carotid; opening of the purulent pocket into the pharynx and into the external auditory canal without lesion of the tympanum, 555.

A case of myxo-sarcoma of the tympanum, 554.

A cicatrix of the membrana tympani vibrating synchronously with the respiration and the pulse, 531.

A method to render microscopic preparations of the hearing organs transparent, 403.

Ametropia in microscopic work, 47.

A new and more convenient instrument than the Politzer air bag for inflating the middle ear, 76.

A new operation for trichiasis and distichiasis, 41.

An anomalous case of interstitial keratitis, 163.

An otological convenience, 525.

A rare case of verbal deafness, 402.

Australian Otological Society, 556.

Collection of ascarides developed in the interior of the mastoid process, and spontaneously discharged externally, 552.

Communication upon deep brain abscess consequent upon acute disease of the temporal bone, 397.

Eczema of the external auditory canal, 552.

Foreign body in the external auditory canal, 522.

Further contribution to the cure-promoting complication of the acute purulent tympanic inflammation, 77.

Intra-tympanic injections in the treatment of dry catarrh of the middle ear, 555.

Malformation of the auricle, 78.

Observations on hereditary syphilis of the middle ear, 401.

Rubber protector for the Politzer nose-piece, 78.

Stacke's operation in sub-dural abscesses, 555.

The influence of affections of the upper air-tract upon the ear, 63.

The influence of fatigue upon the auditive function, 553.

Treatment of cerebral abscess sequel to otitis media, 551.

Tri-chloracetic acid in chronic suppuration of the ear, 395.

Two cases of hematoma of the external auditory canal in children, 402.

Upon deaf-dumbness, 77.

An otological convenience, 525.

American Medical Association, section of ophthalmology, program, 234.

An argument for amblyopia ex-anopsia in convergent strabismus, 149.
An unusual case of aural deformity; operation, 201.
A new and more convenient instrument than the Politzer air bag for inflating the middle ear, 76.
A new artificial eye made entirely of glass, and giving images of exactly the same size as the schematic eye of Helmholtz, 320.
A new mastoid retractor, 528.
A new middle ear syringe, 527.
A problem in cemented bi-focal lenses solved by the prism-diopter, 20.
Autoscopy of the air passages (inspection without laryngeal mirror), 602.

BAGINSKY, B., On cholesteatoma of the ear, 71.
Ball, James Moores, Treatment of traumatic cataract attended by rapid swelling of the lens, 16.
Banister, J. M., A case of membrana pupillaris perseverans in both eyes in an adult, 354.
A case of retention of a metallic splinter in a blind eye for seventeen years without the occurrence of sympathetic inflammation, 353.
Barnes, J. Steele, Systematic acoustic gymnastics in the treatment of deaf-mutism, and cases of nerve-deafness in general, 390.
Bates, W. H., A new middle ear syringe, 527.
Belt, E. Oliver, Prognostic significance of albuminuric retinitis, 291.
Boerne Bettman, Ripening of immature cataract by direct trituration, 29.
Bilateral, congenital ptosis, associated with complete paralysis of all the external ocular muscles, 55.
Black, G. Melville, The nasal trephine in hypertrophy of the inferior turbinated body, 91.
Book notices, A book for trial-lenses, 95.
An old French Ophthalmic Journal in American dress (Annales d'Oculistique), 243.
A practical system of self-instruction in the German language for physicians and medical students. Albert Pick, 95.
A system of legal medicine, 445.
Chemically pure hypophosphites. Syrup of hydriodic acid. Therapeutical indications for use, with clinical data, 244.
One hundred years of business life, Schieffelin & Co., 96.
Skiascopy and its practical application to the study of refraction. Edward Jackson, 444.
The toxic amblyopias; their symptoms, varieties, pathology and treatment. Casey A. Wood, 242.
The Year-book of Treatment for 1895, 447.
Transactions of the sixteenth annual meeting of the American Laryngological Association, 243.
Wills Eye Hospital Reports, Vol. I, No. 1, 444.
Brown, Edward J., Recurrent ulcers of the cornea of nasal origin; episcleritis; cure, 241.
Bruner, Wm. E., Detachment of the retina, 36.
Traumatic paralysis of the external rectus, 473.
Bull, Charles Stedman, Purulent inflammation of the eyeball and orbital tissue, and paralysis of the ocular muscles as possible complication or sequlæ of influenza, 157.

CANTRELL, J. Abbott, Eczema of the ears, 535.
Cellulitis following Mules' operation, 42.
Chappell, Walter F., Semi-fluid preparations for nasal use, 225.
Cholesteatoma of the ear, 71.
Chronic interstitial ophthalmitis (chronic simple glaucoma, 271.
Churchman, V. T., Pulsating exophthalmos, 486.
Clonic blepharospasm of hysterical origin in a male, 495.
Coleman, W. Franklin, An argument for amblyopia ex-anopsia in convergent strabismus, 149.
Corneal opacities. Clinical study of cases treated by different methods, 1.
Corneal suture in cataract extraction, 39.

DEDAVAN, D. Bryson, Extensive perforations of the bony septum, 214.
Dennis, David N., Corneal opacities. Clinical study of cases treated by different methods, 1.
The injector of Delstanche, with modified middle ear tip, 204.
de Schweinitz, G. E., Remarks on the field of vision in certain cases of neglected eyes, 249.
Description of an improved form of trial frame, 498.
Dessar, Leonard A., Abstracts from current American and English otological literature, 412, 573.
Acute attical disease, 574.
A few otological don'ts, 413.

An electric pressure sound for the direct vibration of the membrana tympani, 577.
Clonic spasm of the tensor tympani, 412.
Deafness from intra-nasal disease, 575.
Diffuse external otitis, 416.
Evacuation of the tympanum, 415.
Furunculosis of the external auditory canal, 412.
Mastoid operations in diabetes, 575.
Otitis media as a complication of pneumonia, 573.
Successful mechanical treatment of some unusual aural conditions, 414.
The electro-pneumatic masseur in tinnitus aurium, 414.
The prevention of mastoid empyema, 576.
The prime effect upon the ear of nasal stenosis, 513.
Vibratory treatment for deafness, 575.
Detachment of the retina, 36.
Dodd, Oscar, Hereditary retro-bulbar neuritis, 300.

EATON, F. B., Identical retinal impressions on corresponding points not necessary for binocular single vision, 452.
The laws of parallel ocular motion and their misstatement in treatises and text-books, 109.
Eczema of the ears, 535.
Embolism of the inferior branch of the central retinal artery, 35.
Exfoliation of the cochlea, vestibule and semi-circular canals, 189.
Extension of tubercular inflammation to the base of the temporo-sphenoidal lobe, 68.
Extensive perforations of the bony septum, 214.

FIBROMA of eyelids, 34.
Foreign bodies in the ear and nose, 228.
Foreign body in sclera for thirteen years, 164.
Foster, Hal, The use of local applications of guaiacol in diseases of the throat, 233.
Foucher, A. A., A few modifications in the operating process of adenoid tumors, 222.
Three cases of eye diseases of dental origin, 500.
Freudenthal, W., The so-called bleeding polypus of the nasal septum, 424.
Further contribution to the cure-promoting complication of the acute purulent tympanic inflammation, 77.

GALLICIN, a gallic acid derivative—its use in the treatment of eye diseases, 238.
Glaucoma curable without operation, 132.
Gleitsmann, J. W., Autoscopy of the air passages (inspection without laryngeal mirror), 602:
The application of the galvano-cautery in the nasal passages, 216.
Translations from current foreign laryngological literature, 436, 602.
Surgical treatment of laryngeal tuberculosis, 431.
Goldstein, M. A., Exfoliation of the cochlea, vestibule and semi-circular canals, 189.
Gomez, Vincent, The evils of Wilde's incision, 547.
Tinnitus aurium and some results obtained by its treatment with coniin hydrobromate, 540.
Goode, Geo. H., Embolism of the inferior branch of the central retinal artery, 35.
Fibroma of eyelids, 34.
Gould, George M., Some findings concerning so-called muscle-imbalance and its treatment, 262.
Gradle, H., Which nerves give rise to the sensation of photophobia? 454.
Greene, D. Milton, Reports of seven interesting ear cases, 379.

HAMILTON, E. E., The quarter dioptry cylinder—some testimony for, 328.
Hardie, T. Melville, Abstracts from current foreign otological literature, 206, 405, 561.
An unusual cases of otitis externa, 572.
Classified list of the contributions to otological literature for 1894, 79.
Experiments on the irrigation of the tympanic cavity, 406.
Extrinsic auricular reflexes, 409.
Iron, silver, lead and mercury in diseases of the ear, 570.
Irrigation of tympanum, 407.
Lining mastoid cavity after chiselling, 411.
Methods of operation in the various brain complications of otitic origin, 566.
Operations on the mastoid apophysis, 212.
Proceedings of the fourth meeting of the German Otological Association, 564.
Pyemia of otitic origin, 206.

The rational treatment of acute otitis media, 208.

Shall we be conservative or radical as regards operation in acute mastoiditis? 572.

The prophylaxis and treatment of purulent otitis media in infants, 572.

The staphylococci and otorrhea, 211.

The treatment of tinnitus aurium, 561.

Transparent macroscopic preparations of the entire organ of hearing, 211.

Treatment of the attic in chronic suppuration, 408.

Hereditary retro-bulbar neuritis, 300.

Heustis, J. W., Some of the difficulties of an oculist in a small city, 238.

Hilgartner, H. L., Report of a case in counter evidence to the infectious theory of sympathetic ophthalmia, 340.

Holinger, J., An unusual case of aural deformity, 201.

Hope, Geo. B., Is acute tonsillitis in any way dependent upon the rheumatic diathesis? 434.

Horsey, Alfred J., Notes of a case of glioma of the retina, 317.

Sarcoma of choroid, 324.

Hotz, F. C., On the alleged action of the oblique muscles in oblique astigmatism, 101.

The reconstruction of the lid border in entropium of the upper lid, 296.

Hypermetropia of high degree, with a study of cases, 123.

IDENTICAL retinal impressions on correspondent points not necessary for binocular single vision, 451.

Is acute tonsillitis in any way dependent upon the rheumatic diathesis? 434.

Is glaucoma curable without operation? 132.

Is the physiognomy of the fundus oculi in epilepsy characteristic? 144.

JOHNSON, Walter B., Removal of the superior maxillary bone for sarcoma, involving the central and orbital cavities and the antrum of Highmore, 466.

KEIPER, George F., Tetanus following wound of lower eyelid, 336.

Knight, Charles H., A case of fibroma of the nasal fossa, 220.

Koerner, Otto, Tuberculosis of the temporal bone. Extension of the tubercular inflammation to the base of the temporo-sphenoidal lobe, 68.

LEDBETTER, Samuel L., A case of sympathetic ophthalmia from iridectomy, 476.

Lederman, M. D., Abstracts from current rhinological and laryngological literature, 439, 606.

Abstracts of papers read at the Seventeenth Annual Congress of the American Laryngological Association, 431.

A case of congenital atresia of the naso-pharynx, 441.

A consideration of the vascular mechanism of the nasal mucous membrane, etc., 439.

An extreme case of angina ludovici arising from an inflamed tooth, 609.

Cocain in chloroform narcosis, 441.

Disease of the middle turbinated with pus in the ethmoid cells, 441.

Ecchondroma arising from nasal bone, 441.

Experiences with Paquin's antituberele serum in the treatment of laryngeal tuberculosis, 608.

Foreign bodies in the ear and nose, 228.

Hemorrhagic pharyngitis, 440.

Multiple benign papillomata of the buccal mucous membrane, 607.

Physiology and anatomy of the nose, 606.

Recurrent nasal fibroma, 606.

Removal of the tonsils by the wire snare, 440.

Saddle-back nose, 442.

The etiology of nervous polypi of the nose, 609.

Trigeminal neuralgia and nasal disease, 609

Tuberculosis of the upper air passages, 607.

Tubercular tumors of the larynx, 439.

Zinc sterate in the treatment of atrophic rhinitis, 440.

LeMond, Robert Fields, Relationship between diseases of the eye and brain, 345.

MAY, CHARLES H., Abstracts from current American and English ophthalmological literature, 38, 174, 356, 503.

A case of cerebral clot; loss of vision following injury; trephining; recovery, 42.

A clinical study of 167 cases of glaucoma simplex, 508.

Affections of the eye in connection with gout, 514.

Ametropia in microscopic work, 47.

A new application of the keratometer of Javal, 364.

A new operation for ptosis, 361.

A new operation for trichiasis and distichiasis, 41.

Ante-partem ophthalmia neonatorum (intra-uterine ophthalmia), 183.

A suggestion as to the treatment of penetrating wounds of the ciliary region and lens, 179.

Blood-staining of the cornea, 365.

Cataract operations between the ages of 80 and 90, with a table of cases, 507.

Cellulitis following Mules' operation, 42.

Clinical and anatomical study of serous or simple cysts of the conjunctiva, 358.

Corneal suture in cataract extraction, 38.

Diabetic retinitis, 359.

Diseases of the eye dependent on the grip, 361.

Hints concerning the performance of the operation for the extraction of senile cataract, being a record of personal experience, 174.

How Javal's Keratometer may be easily changed into a good chromatometer for the examination of patients as to color-blindness, 516.

Interstitial keratitis and synovitis, with a report of a case in which both were unilateral, 362.

Note on 925 extractions of cataract, 39.

Observations on some phases of opacity, and on luxation of the crystalline lens, 40.

Peculiar perversion of the color perception, 365.

Penetrating wounds of the eyeball, 511.

Preliminary report of 612 cases of convergent squint with special reference to the final resuts of operation, 503.

Removal of the lens for high degrees of myopia, 178.

Several considerations of the application of electrolysis in twelve cases of detachment of the retina, 510.

Some additional studies upon the clinical value of repeated careful correction of manifest refractive error in plastic iritis, 186.

Subconjunctival injections in the treatment of eye diseases, 43.

The association of certain forms of myopia with disease of the nose and pharynx, 507.

The etiology and treatment of internal strabismus, 187.

The ocular symptoms of locomotor ataxia, 513.

The parallax test for heterophoria, 356.

The prevention and treatment of ophthalmia neonatorum, and the necessity for more efficient legislation to prevent blindness from this cause, 180.

The physiology of certain oculomotor phenomena with respect to some recent theories of asthenopia, 45.

The pupil in health and in epilepsy, 514.

The question of the efficacy of subconjunctival injections of mercuric bichlorid in ophthalmic therapeutics, 185.

The therapeutic value of ice in ophthalmic surgery, 43.

The use of chlorin water in ocular therapeutics, 43.

Three cases of strabismus, with analogous diplopia. An original and an acquired fixation spot in the same eye, 46.

Three varieties of epiphoria, 186.

Transplantation of a strip of skin into the inter-marginal space of the lids, 506.

Tropa-cocain as a local anesthetic in eye surgery, 41.

Two cases of diphtheritic conjunctivitis treated by Klein's antitoxin, 184.

Miscellaneous, 98, 238, 443.

Murrell, T. E., The value of scopolamin hydrochlorat in testing refraction, 478.

NORTON, C. E., A case illustrating the relation between the muscular balance of the eyes and their refractive condition, 326.

Note on 925 extractions of cataract, 39.

Notes of a case of glioma of the retina, 317.

Notes on the recent meeting of the German Ophthalmological Society, 491.

OBSERVATIONS on some phases of opacity, and on luxation of the crystalline lens, 40.

Oliver, Charles A., Description of an improved form of trial frame, 498.

On cholesteatoma of the ear, 71.

On the alleged action of the oblique muscles in oblique astigmatism, 101.

Oppenheimer, Seymour, the advocation of a new method of operation for marked diffuse cartilaginous deflection of the nasal septum, 598.

PAPERS read at Seventeenth Annual Congress of the American Laryngological Association, 431.
Paralysis of both external recti following diphtheria, 171.
Paresis of accommodation following diphtheria treated by Behring's heil-serum, 167.
Park, J. Walter, A case of acute purulent inflammation of middle ear with two attacks of double optic neuritis, no mastoid complication, frequent delirium, two operations and recovery, 57.
A new and more convenient instrument than the Politzer air bag for inflating the middle ear, 76.
Passow's method of transplantation for the radical (mastoid) operation in chronic suppurations of the middle ear, 533.
Phillips, Wendell C., Thyrotomy for removal of multiple papilloma of the larynx, 87.
Pilgrim, Maurice F., Is glaucoma curable without operation? 132.
Prentice, Chas. F., A problem in cemented bi-focal lenses. Solved by the prism-diopter, 20.
The iris as diaphragm and photostat, 456.
Professional news, 94, 234, 443, 611.
Prognostic significance of albuminuric retinitis, 291.
Pulsating exophthalmos, 486.
Purulent inflammation of the eyeball and orbital tissue, and paralysis of the ocular muscles as possible complications or sequelæ of influenza, 157.

REBER, Wendell, Abstracts from current neurological literature, 417, 584.
A case of alexia (word blindness) with right-sided homonymous hemianopsia, 421.
A case of subacute nuclear ophthalmoplegia with paralysis of the extremities, 585.
A case of tabes, associated with remotely previous hemiplegia, and exhibiting unilateral reflex iris paralysis, 423.
Clonic blepharospasm of hysterical origin in a male, 495.
Hysterical amblyopia and amaurosis, 587.
Intra-cranial gumma (?) with ocular symptoms, 586.
Is the physiognomy of the fundus oculi in epilepsy characteristic, 144.
Note of a case of softening of the right angular gyrus, with left-sided ptosis, 421.
Optic neuritis as a sign of brain tumor, 422.
Peculiar iris-reaction in the presence of post-neuritic optic atrophy, 419.
Progressive muscular atrophy involving in its later stages the external ocular muscles, 584.
Tabes arrested by blindness, 588.
The alleged reflex causes of nervous diseases, 417.
The differential diagnosis of traumatic intra-cranial lesions, 584.
The disturbances of sensibility of the globe of the eye and its appendages in locomotor ataxia, 586.
Recurrent ulcers of the cornea of nasal origin, 240.
Relationship between diseases of the eye and brain, 345.
Remarks on the field of vision in certain cases of "neglected eyes," 249.
Removal of the superior maxillary bone for sarcoma, involving the central and orbital cavities and the antrum of Highmore, 466.
Report of a case in counter evidence to the infectious theory of sympathetic ophthalmia, 340.
Report of a case of double pediculated myxo-fibroma, 594.
Reports of seven interesting ear cases, 379.
Restoration of qualitative perception of light after iridectomy in a case of complete blindness from glaucoma simplex, 52.
Retinitis pigmentosa. Report of case, 24.
Richardson, C. W., Report of a case of double pediculated myxo-fibroma, 594.
Richey, S. O., Chronic interstitial ophthalmitis (chronic simple glaucoma), 271.
Ring, Frank W., Foreign body in sclera for thirteen years, 164.
Ripening of immature cataract by direct trituration, 29.
Roy, Dunbar, Retinitis pigmentosa. Report of case, 24.

SARCOMA of choroid, 324.
Saunders, Robert R., A case of gunshot injury involving both eyes, studied nine years after the accident, 350
An anomalous case of interstitial keratitis, 163.
Savage, G. C., The oblique muscles as related to oblique astigmatism. Reply to Dr. Hotz's criticism, 305.

Scheppegrell, W., The comparative pathology of the negro in diseases of the nose, throat and ear, 589.
Semi-fluid preparations for nasal use, 225.
Some findings concerning so-called muscle-imbalance and its treatment, 262.
Some of the difficulties of the ophthalmologist in a small city, 238.
Some remarks on skiascopy or the shadow test, 5.
Sponge in orbit after enucleation of eye, 241.
Spontaneous hemorrhage (bloody tears) from the conjunctiva, 169.
Subconjunctival injections in the treatment of eye diseases, 44.
Systematic acoustic gymnastics in the treatment of deafmutism and cases of nerve deafness in general; a system as advocated by Professor Urbantschitsch, of Vienna, 390.
Suker, George F., Gallicin, a gallic acid derivative—its use in the treatment of eye diseases, 338.
The formation of the stump after an enucleation, 484.
Surgical treatment of laryngeal tuberculosis, 431.

TETANUS following wound of lower eyelid, 336.
The advocation of a new method of operation for marked diffuse cartilaginous deflection of the nasal septum, 598.
The application of the galvano-cautery in the nasal passages, 216.
The comparative pathology of the negro in diseases of the nose, throat and ear, from an analysis of 11,855 cases, 589.
The conjunctiva as a protective covering in extensive wounds of the cornea, 53.
The corneal suture after cataract extraction, 54.
The evils of Wilde's incision, 528.
The formation of the stump after an enucleation, 484.
The halo, or rainbow symptom in glaucoma, 11.
The influence of affections of the upper air-tract upon the ear, 63.
The injector of Delstanche, with modified middle ear tip, 204.
The iris, as diaphragm and photostat, 456.
The laws of parallel ocular motion and their misstatement in treatises and text-books, 109.
The nasal trephine in hypertrophy of the inferior turbinated body, 91.
The oblique muscles as related to oblique astigmatism. Reply to Dr. Hotz's criticism, 305.
The physiology of certain oculo-motor phenomena with respect to some recent theories of asthenopia, 45.
The quarter dioptry cylinder—some testimony for, 328.
The reconstruction of the lid border in entropium of the upper lid, 296.
The relations of astigmatism and cataract, 166.
The so-called bleeding polypus of the nasal septum, 424.
The significance of albuminuric retinitis in pregnancy, 44.
The therapeutic value of ice in ophthalmic surgery, 43.
The use of chlorin water in ocular therapeutics, 43.
The use of formalin in ocular therapeutics, 48.
The use of local applications of guaiacol in diseases of the throat, 233.
The value of scopolamin hydrochlorat in testing refraction, 478.
Thorington, J., Some remarks on skiascopy or the shadow test, 5.
Thorner, Max, A new mastoid retractor, 528.
Passow's method of transplantation for the radical (mastoid) operation in chronic suppurations of the middle ear, 533.
The importance of coryza in children, 534.
Thyrotomy for removal of multiple papilloma of the larynx, 87.
Tinnitus aurium and some results obtained by its treatment with coniin hydrobromate, 540.
Three cases of eye diseases of dental origin, 500.
Three cases of strabismus, with analogous diplopia. An original and an acquired fixation spot in the same eye, 46.
Translations from current foreign laryngological literature, 436, 602.
Traumatic paralysis of the external rectus, 473.
Treatment of traumatic cataract attended by rapid swelling of the lens, 16.
Tropa-cocain as a local anesthetic in eye surgery, 41.
Tuberculosis of the temporal bone. Extension of the tubercular inflammation to the base of the temporosphenoidal lobe, 68.

UPON deaf-dumbness, 77.

WEILAND, Carl, A new artificial eye, made entirely of glass and giving images of exactly the same size as the schematic eye of Helmholtz, 320.

Which nerves give rise to the sensation of photophobia? 454.

Willetts, Joseph E., The halo, or rainbow symptom in glaucoma, 11.

Wood, Casey A., Abstracts from current foreign ophthalmic literature, 48, 165, 367, 519.

A case of chalkosis of the retinæ, 172.

A case of repair of a large rupture of the lens capsule without the formation of cataract, 375.

Anterior synechiæ and their treatment by synechotomy, 520.

Bilateral, congenital ptosis, associated with complete paralysis of all the external ocular muscles, 55.

Fibro-sarcoma of the orbit, 521.

Gland-like bodies beneath the anterior lenticular capsule, 377.

Massage of the eye, 519.

Meeting of the German Ophthalmological society, 491.

Myoma of the choroid, 372.

Notes on the recent meeting of the German Ophthalmological Society, 491.

Operations for secondary cataract, 523.

Panophthalmitis produced by old leucomata adherentia, 520.

Paralysis of both external recti following diphtheria, 171.

Paresis of accommodation following diphtheria treated by Behring's heil-serum, 167.

Restoration of qualitative perception of light after iridectomy in a case of complete blindness from glaucoma simplex, 52.

Some theories relative to the causation of glaucoma, 524.

Spontaneous hemorrhage (bloody tears) from the conjunctiva, 169.

Tattooing the cornea for the purpose of improving vision, 170.

The conjunctiva as a protective covering in extensive wounds of the cornea, 53.

The corneal suture after cataract extraction, 54.

The ocular complications of diabetes, 523.

The operative treatment of high degrees of myopia, 368.

The pneumococcus in ocular pathology, 522.

The relations of astigmatism and cataract, 166.

The Vossius method in cataract extraction, 375.

Variations in the pupil accompanying pulmonary tuberculosis, 367.

What is the best treatment of hernia of the iris? 522.

ZIMMERMAN, M. W., Hypermetropia of high degree, with a study of cases 123.

CONTENTS OF VOLUME IV.

NUMBER I.

ORIGINAL COMMUNICATIONS.

OPHTHALMOLOGY.

PAGE.

1. Corneal Opacities Treated by Different Methods. By David N. Dennis, M. D., of Erie, Pa. 1
2. Skiascopy or the Shadow Test. By J. Thorington, M. D., of Philadelphia. 5
3. The Halo Symptom in Glaucoma. By Joseph E. Willetts, M. D., of Pittsburg, Pa. 11
4. Treatment of Traumatic Cataract Attended by Rapid Swelling of the Lens. By James Moores Ball, M. D., of St. Louis. 16
5. A Problem in Cemented Bi-Focal Lenses Solved by the Prism-Diopter. By Chas. F. Prentice, of New York. 20
6. Retinitis Pigmentosa; Report of Case. By Dunbar Roy, M. D., of Atalanta, Ga. 24
7. Ripening of Immature Cataract by Direct Trituration. By Boerne Bettman, M. D., of Chicago. 29
8. Fibroma of Eyelids. Embolism of the Inferior Branch of the Central Retinal Artery. By Geo. H. Goode, M. D., of Cincinnati, Ohio. 34 35
9. Detachment of Retina. By Wm. E. Bruner, M. D, of Cleavland, Ohio 36
10. Abstracts from Current American and English Ophthalmic Literature. By Charles H. May, M. D., of New York. 38
11. Abstracts from Foreign Current Ophthalmic Literature. By Casey A. Wood, M. D., of Chicago. 48

OTOLOGY.

12. Case of Acute Purulent Inflammation of Middle Ear, with Double Optic Neuritis. By J. Walter Park, M. D., of Harrisburg, Pa. 57
13. The Influence of Affections of the Upper Air-Tract upon the Ear. By H. A. Alderton, M. D., of Brooklyn, N. Y. 63
14. Tuberculosis of Temporal Bone. Extension to Base of Temporo-Sphenoidal Lobe. (Translated by H. A. Alderton, M. D., of Brooklyn, N. Y.) By Otto Koerner, M. D. 68
15. On Cholesteatoma of the Ear. (Translated by George Morgenthau, M. D., of Chicago.) By Dr. B. Baginsky 71

PAGE

16. New and More Convenient Instrument than Politzer's Air Bag for Inflating the Middle Ear. By J. Walter Park, M. D., of Harrisburg, Pa..... 76
17. Abstracts from Foreign Current Otologic Literature. By H. A. Alderton, M. D., of Brooklyn, N. Y..... 77
18. List of Contributors to Otological Literature for 1894. By T. Melville Hardie, M. D., of Chicago..... 79

RHINOLOGY AND LARYNGOLOGY.

19. Thyrotomy for Removal of Multiple Papilloma of the Larynx. By Wendell C. Phillips, M. D., of New York..... 87
20. The Nasal Trephine in Hypertrophy of the Inferior Turbinated Body. By G. Melville Black, M. D., of Denver, Colo..... 91

MISCELLANEOUS.

21. Professional News..... 94
22. Book Notices..... 95
23. Miscellaneous..... 98
24. List of Collaborators and Contributors.....100-111
25. To Contributors..... 112

NUMBER II.

ORIGINAL COMMUNICATIONS.

OPHTHALMOLOGY.

PAGE

1. On the Supposed Action of the Oblique Muscles in Oblique Astigmatism. By F. C. Hotz, M. D., of Chicago..... 101
2. The Laws of Parallel Ocular Motion and their Misstatement in Treatises and Text-Books. By F. B. Eaton, M. D., of Portland, Ore..... 109
3. Hypermetropia of High Degree, with a Study of Cases. By M. W. Zimmermann, M. D., of Philadelphia..... 123
4. A New Operation for the Advancement of the Recti. By C. Prentice..... 128
5. Is Glaucoma Curable Without Operation? By Maurice F. Pilgrim, A. B., M. D., of Carbondale, Pa..... 132
6. Is the Physiognomy of the Fundus Oculi in Epilepsy Characteristic? By Wendell Reber, M. D., of Pottsville, Pa..... 144
7. An Argument for Amblyopia Ex-Anopsia in Convergent Strabismus. By W. Franklin Coleman, M. D., of Chicago..... 149
8. Purulent Inflammation of the Eyeball and Orbital Tissue, and Paralysis of the Ocular Muscles as Possible Complications or Sequelæ of Influenza. By Charles Stedman Bull, M. D., of New York..... 157
9. An Anomalous Case of Interstitial Keratitis. By Robert R. Saunders, M. D., of Philadelphia..... 163
10. Foreign Body in Sclera for Thirteen Years. By Frank W. Ring, M. D., of New York..... 164
11. Abstracts from Foreign Ophthalmic Journals. By Casey A. Wood, M. D., of Chicago..... 165
12. Abstracts From Current American and English Ophthalmic Literature. By Charles H. May, M. D., of New York..... 174

OTOLOGY.

13. Exfoliation of the Cochlea, Vestibule and Semi-circular Canals. By M. A. Goldstein, M. D., of St. Louis, Mo..... 189
14. An Unusual Case of Aural Deformity; Operation. By J. Holinger, M. D., of Chicago..... 201
15. The Injector of Delstanche, with Modified Middle Ear Tip. By David N. Dennis, M. D., of Erie, Pa..... 204
16. Abstracts from Current Foreign Otological Literature. By T. Melville Hardie, B. A., M. D., of Chicago..... 206

RHINOLOGY AND LARYNGOLOGY.

PAGE

17. Extensive Perforations of the Bony Septum. By D. Bryson Delavan, M. D., of New York 214
18. The Application of the Galvano-Cautery in the Nasal Passages. By J. W. Gleitsmann, M. D., of New York 216
19. A Case of Fibroma of the Nasal Fossa. By Charles H. Knight, M. D., of New York 220
20. A few Modifications in the Operating Process of Adenoid Tumors. By A. A. Foucher, M. D., of Montreal 222
21. Semi-fluid Preparations for Nasal Use. By Walter F. Chappell, M. D., of New York 225
22. Foreign Bodies in the Ear and Nose. By M. D. Lederman, M. D., of New York 228
23. The Use of Local Applications of Guaiacol in Diseases of the Throat. By Hal Foster, M. D., of Kansas City, Mo. 233
24. Professional News 234
    Program Ophthalmic Section American Medical Association.. 234
    Practice for Sale 238
25. Miscellany 238
26. Book Notices 242

NUMBER III.

ORIGINAL COMMUNICATIONS.

OPHTHALMOLOGY.

PAGE.

1. Remarks on the Field of Vision in Certain Cases of "Neglected Eyes." By G. E. de Schweinitz, M. D., of Philadelphia..... 249
2. Some Findings Concerning So-called Muscle-Imbalance and its Treatment. By George M. Gould, A. M., M. D., of Philadelphia..... 262
3. Chronic Interstitial Ophthalmitis. (Chronic Simple Glaucoma.) By S. O. Richey, M. D., of Washington, D. C..... 271
4. Prognostic Significance of Albuminuric Retinitis. By E. Oliver Belt, M. D., of Washington, D. C..... 291
5. The Reconstruction of the Lid Border in Entropium of the Upper Lid. By F. C. Hotz, M. D., of Chicago..... 296
6. Hereditary Retro-Bulbar Neuritis. By Oscar Dodd, M. D., of Chicago..... 300
7. The Oblique Muscles as Related to Oblique Astigmatism: Reply to Dr. Hotz's Criticism. By G. C. Savage, M. D., of Nashville, Tenn..... 305
8. Notes of a Case of Glioma of the Retina. By Alfred F. Horsey, M. D., of Ottawa, Canada..... 317
9. A New Artificial Eye, Made Entirely of Glass and Giving Images of Exactly the Same Size as the Schematic Eye of Helmholtz. By Carl Weiland, M. D., of Philadelphia..... 320
10. Sarcomo of Choroid. By Alfred F. Horsey, M. D., of Ottawa, Canada..... 324
11. A Case Illustrating the Relation Between the Muscular Balance of the Eyes and their Refractive Condition. By C. E. Norton, M. D., of Lewiston, Maine..... 326
12. The Quarter Dioptry Cylinder—Some testimony For. By E. E. Hamilton, M. D., of Wichita, Kan..... 328
13. Tetanus Following Wound of Lower Eyelid. By George F. Keiper, A. M., M. D., of Lafayette, Ind..... 336
14. Gallicin, A Gallic Acid Derivative—Its Use in the Treatment of Eye Diseases. By George F. Suker, M. D., of Toledo, Ohio.. 338
15. Report of Case in Counter Evidence to Infectious Theory of Sympathetic Ophthalmia. By H. L. Hilgartner, M. D., of Austin Texas..... 340
16. Relationship Between Diseases of the Eye and Brain. By Robert Fields LeMond, A. M., M. D., of Denver, Colo..... 345
17. Gunshot Injury Involving Both Eyes, Studied Nine Years After the accident. By Robert R. Saunders, M. D., of Philadelphia. 350

18. Case of Retention of a Metallic Splinter in a Blind Eye for Seventeen Years Without the Occurrence of Sympathetic Inflammation. Case of Membrana Pupillaris Perseverans in Both Eyes in an Adult. By J. M. Banister, A. B., M. D., of Fort Leavenworth, Kan..... 353
19. Abstracts from American and English Ophthalmic Journals. By Charles H. May, M. D., of New York..... 356
20. Abstracts from Foreign Ophthalmic Journals. By Casey A. Wood, M. D., of Chicago..... 367

OTOLOGY.

21. Reports of Seven Interesting Ear Cases. By D. Milton Greene, M. D., of Grand Rapids, Mich..... 379
22. Systematic Acoustic Gymnastics in the Treatment of Deaf-mutism and Cases of Nerve Deafness in General, as Advocated by Professor Urbantschitsch, of Vienna. By J. Steele Barnes, M. D., of Milwaukee..... 390
23. Translations from Current Foreign Otological Literature (Abridged). By Henry A. Alderton, M. D., of Brooklyn.... 395
24. Abstracts from Current Foreign Otological Literature. By T. Melville Hardie, M. D., of Chicago..... 405
25. Abstracts from Current American and English Otological Literature. By Leonard A. Dessar, M. D., of New York..... 412

NEUROLOGY.

26. Abstracts from Current Neurological Literature. By Wendell Reber, M. D., of Pottsville, Pa..... 417

RHINOLOGY AND LARYNGOLOGY.

27. The So-called Bleeding Polypus of the Nasal Septum. By W. Freudenthal, M. D., of New York..... 424
28. Surgical Treatment of Laryngeal Tuberculosis; Abstract of a Paper. By J. W. Gleitsmann, M. D., of New York..... 431
29. Acute Tonsillitis Dependent Upon the Rheumatic Diathesis; Abstract of a Paper. By George B. Hope, M. D., of New York 434
30. Case of Circumscribed Gummatous Ulcerative Tumor of the Larynx. By Dr. E. W. Tschlenow, of Moscow. Translated and abridged by J. W. Gleitsmann, M. D., of New York..... 436
31. Abstracts from Current Rhinological and Laryngological Literature. By M. D. Lederman, M. D., of New York..... 439

Professional News..... 443
Practice For Sale..... 443

BOOK NOTICES.

Skiascopy and its Practical Application to the Study of Refraction. By Edward Jackson, A. M., M. D..... 444
Wills Eye Hospital Reports, Vol. I, No. 1..... 444
A System of Legal Medicine. By Allen McLane Hamilton, M. D.... 445
The Year-Book of Treatment for 1895..... 447

NUMBER IV.

OPHTHALMOLOGY.

PAGE.

1. Identical Retinal Impressions on Corresponding Points Not Necessary for Binocular Single Vision. By F. B. Eaton, M. D., of Portland, Ore. 451
2. Which Nerves Give Rise to the Sensation of Photophobia? By H. Gradle, M. D., of Chicago. 454
3. The Iris, as Diaphragm and Photostat. By Charles F. Prentice, M. E., of New York. 456
4. Removal of the Superior Maxillary Bone for Sarcoma, Involving the Cerebral and Orbital Cavities and the Antrum of Highmore. By Walter B. Johnson, M. D., of Paterson, N. J. 466
5. Traumatic Paralysis of the External Rectus. By Wm. E. Bruner, A. M., M. D., of Cleveland, Ohio. 473
6. A Case of Sympathetic Ophthalmia from Iridectomy. By Samuel L. Ledbetter, M. D., of Birmingham, Ala. 476
7. The Value of Scopolamin Hydrochlorate in Testing Refraction. By T. E. Murrell, M. D., of St. Louis, Mo. 478
8. The Formation of the Stump after an Enucleation. By George F. Suker, M. D., of Toledo, Ohio. 484
9. Pulsating Exophthalmos. By V. T. Churchman, B. S., M. D., of Charleston, W. Va. 486
10. Notes on the Recent Meeting of the German Ophthalmological Society. By Casey A. Wood, M. D., of Chicago. 491
11. Clonic Blepharospasm, of Hysterical Origin, in a Male. By Wendell Reber, M. D., of Pottsville, Pa. 495
12. Description of an Improved Form of Trial Frame. By Charles A. Oliver, A. M., M. D., of Philadelphia, Pa. 498
13. Three Cases of Eye Diseases of Dental Origin. By A. A. Foucher, M. D., of Montreal. 500
14. Abstracts from Current American and English Ophthalmic Literature. By Charles H. May, M. D., of New York. 503
15. Abstracts from Foreign Current Ophthalmological Literature. By Casey A. Wood, M. D. of Chicago. 519

OTOLOGY.

16. An Otological Convenience. By Henry A. Alderton, M. D., of Brooklyn. 525
17. A New Middle Ear Syringe. By W. H. Bates, M. D., of New York 527
18. A New Mastoid Retractor. By Max Thorner, A. M., M. D., of Cincinnati, O. 528

19. A Cicatrix of the Membrana Tympani, Vibrating Synchronously with the Respiration and the Pulse. By Henry A. Alderton, M. D., of Brooklyn..... 531
20. Dr. Passow's Method of Transplantation for the Radical (Mastoid) Operation in Chronic Suppurations of the Middle Ear. By Max Thorner, of Cincinnati..... 533
21. Eczema of the Ears. By J. Abbott Cantrell, M. D., of Philadelphia..... 535
22. Tinnitus Aurium and Some Results Obtained by its Treatment with Coniin Hydrobromate. By Vincent Gomez, M. D., of Brooklyn, N. Y..... 540
23. Tl Evils of Wilde's Incision—A. Chipault and A. Demoulin. Translated by Vincent Gomez, M. D., of Brooklyn, N. Y..... 547
24. Translations from Current Foreign Otological Literature (Abridged). By H. A. Alderton, M. D., of Brooklyn, N. Y... 551
25. Abstracts from Foreign Current Otological Literature. By T. Melville Hardie, M. D., of Chicago..... 561
26. Proceedings of the fourth meeting of the German Otological Association. Translated (Abridged) by T. Melville Hardie, M. D., of Chicago..... 564
27. Abstracts from Current American and English Otological Literature. By Leonard A. Dessar, M. D., of New York..... 576

NEUROLOGY.

28. Abstracts from Current Neurological Literature. By Wendell Reber, of Pottsville, Pa..... 584

RHINOLOGY AND LARYNGOLOGY.

29. The Comparative Pathology of the Negro in Diseases of the Nose, Throat and Ear, from an Analysis of 11,855 Cases. By W. Scheppegrell, A. M., M. D., of New Orleans, La..... 589
30. Report of a Case of Double Pediculated Myxo-Fibroma. By C. W. Richardson, M. D., of Washington, D. C..... 594
31. The Advocation of a New Method of Operation for Marked Diffused Cartilaginous Deflection of the Nasal Septum. By Seymour Oppenheimer, M. D., of New York..... 598
32. Translations from Current Foreign Laryngological Literature (Abridged). By J. W. Gleitsmann, M. D., of New York..... 602
33. Abstracts from Current Rhinological and Laryngological Literature. By M. D. Lederman, M. D., of New York..... 606

Professional News..... 611